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ABSTRACT

Designed for researchers and leadership trainers, this annotated bibliography reviews approximately 150 documents and journal articles on social indicators, future studies, and policy analysis published between 1970 and 1980. Social indicators and future studies references are organized within the following categories: general, theoretical, education, and methods. Policy analysis literature is grouped as one general unit. Citations, listed alphabetically by author within categories, include publisher, date, and a brief abstract. (LP)

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Technical Report 509

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ANNOTATED BIBLIOGRAPHY OF LITERATURE ON SOCIAL INDICATORS, FUTURE STUDIES, AND POLICY ANALYSIS

James Morrison

LEADERSHIP AND MANAGEMENT TECHNICAL AREA

U. S. Army
Research Institute for the Behavioral and Social Sciences

November 1980

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U. S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

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This bibliography is divided into three sections. The first section reviews the literature for social indicators, the second reviews the literature on future studies, the third section reviews the literature on policy planning and analysis. The articles listed were published primarily between 1970 and 1980.

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Technical Report 509

ANNOTATED BIBLIOGRAPHY OF LITERATURE ON SOCIAL INDICATORS, FUTURE STUDIES, AND POLICY ANALYSIS

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The Leader Development Team of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) is involved in research and development to identify Army training requirements in the leadership and management area. To be timely, the products of such research must address not only the current concerns and issues confronting the Army commander, but also those which can be projected to be emerging in the near future. Hence, the developing technology of future research is pertinent insofar as it provides a medium for extending current findings to future requirements.

This Technical Report provides an annotated bibliography of articles dealing with the emerging technology of futures research.

The research effort is responsive to the requirements of RDT&E Project 2Q162722A791, Leadership and Management Technical Area of the FY 81 ARI Work Program.

JOSEPH ZEIDNER
Technical Director

ANNOTATED BIBLIOGRAPHY OF LITERATURE ON SOCIAL INDICATORS, FUTURE STUDIES AND POLICY ANALYSIS

BRIEF

Requirement:

To determine the state-of-the-art in research involving social indicators, future studies, and policy analysis.

Summary of Topics:

A review of the literature on social indicators, future studies, and policy analysis was conducted. An annotated bibliography was produced which organized references based on the following categories for both the social indicators and the future studies literature: (1) general, (2) theoretical, (3) methods, and (4) education. The policy analysis literature is grouped as one general unit.

Utilization of Findings:

The identification and organization of this literature will be of immediate use to those involved in research on social indicators, future studies, and/or policy analysis. In addition, this literature can serve as a basis for evolving methodologies to project Army long-term personnel requirements.

ANNOTATED BIBLIOGRAPHY OF LITERATURE ON SOCIAL INDICATORS, FUTURE STUDIES, AND POLICY ANALYSIS

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INTRODUCTION

The annotated bibliography presented here covers primarily literature published between 1970 and 1980 and is divided into three sections. The first section reviews the literature on social indicators; the second section reviews the literature on future studies. The articles in each of these sections are grouped under the headings of sources, general, theoretical, methods, and education. The third and briefest section reviews the literature on policy planning and analysis. Though the field of training is the primary focus of the literature reviewed, the articles included are not limited to this arena.

SOCIAL INDICATORS: BIBLIOGRAPHIC SOURCES

Indicators Research, 1975, 2, 81-92.

The basis for selecting social indicators in ten national publications released to date are primarily measures of welfare and measures reflecting public policy and social concerns. The orientation of the volumes from the U.S., France, Canada, Norway, Philippines, Malaysia, Great Britain are discussed. The selection of time series that reflect social processes is proposed and an orientation presented around the concepts of the vital processes, socialization and participation, mobility and stratification, maintaining security, and control and coordination by which social order is attained. A bibliography identifies the national reports known to the author. (AUTHOR)

Gilmartin, K.J., et al. Social indicators: An annotated bibliography of current literature. New York: Garland, 1979.

This bibliography supplements the partially annotated compilation of references to works on social indicators prepared by Wilcox, Brooks, Beal, and Klonghan (Social Indicators and Societal Monitoring: An Annotated Bibliography, 1972). It focuses on literature published during the period 1972-1978 while at the same time including key historical works on the subject published prior to 1972. The authors describe this bibliography as the most comprehensive and the most extensively annotated one available on social indicators for the 1972-1978 period.

The bibliography is divided into seven major sections: Key Historical Works Published Prior to 1972; State-Of-The-Art Overview of Social Indicators Research; Theoretical Approaches to Constructing Social Indicators; Methodological Approaches to Constructing Social Indicators; Analyzing and Reporting Social Indicators; Examples of Social Indicators Used or in Use; and Bibliographies of Social Indicators Research.

Within each section, references are listed in chronological order, the earlier publications listed first.

Rossi, R.J., & Gilmartin, K.J. The Handbook of social indicators: Sources, characteristics, and analysis. New York: Garland STPM Press, 1980.

The authors of this handbook are the founders and directors of the Social Indicators Research Program of the American Institutes for Research and organizers of the Special Interest Group on Social Indicators Research of AERA. The book is intended for all who are concerned with the measurement of social change: policymakers, planners, evaluators, researchers, practitioners, and all other students of the social sciences. It is written in the most simple and straightforward manner possible.

Rossi and Gilmartin provide the reader with both a conceptual grasp of the idea of social indicators and a set of practical guidelines. In nine basic but comprehensive chapters the authors survey the entire field of the "social indicators movement", providing ample illustrations and practical examples, and supplement their treatment of the field with a glossary of terms and an annotated list of suggested readings at the end of each chapter.

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In particular, they give a brief history of the "social indicators movement" in the US and abroad, describe the various definitions, typologies, and uses of social indicators that have been suggested, and outline the important characteristics and their importance for various functional types of indicators. In chapters four through six Rossi and Gilmartin turn their attention to constructing social indicators, present the varieties of existing and new data sources and data collection strategies that can be used in establishing social indicators, and evaluate the advantages and disadvantages of each one. Chapters seven and eight review the methods that can be used to combine and weigh indicators to form composite indices, describe potential problems with each of these methods and how to correct for sources of extraneous variation in an indicator, and discuss the methods, aims and limitations of the most important ways of analyzing social indicators.

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SOCIAL INDICATORS: GENERAL

Bauer, R.A. (Ed.). Social indicators. Cambridge, Mass.: M.I.T. Press, 1966.

In this second volume of a series prepared by the American Academy of Arts and Sciences for the National Aeronautics and Space Administration (NASA) on the impact of the space program on American society, Bauer and his colleagues examine the need to anticipate the consequences of rapid technological change. Two contributors' chapters, Albert Biderman's on social indicators and goals and Bertram Gross' on social systems accounting, have become "classics" in the social indicators literature.

Biderman discusses existing social indicators in terms of their relationships to national goals, the ways in which such statistical series originate, and the multiple uses to which they are put. He illustrates by using crime rates as an example of a set of indicators that the problem of inadequate and inaccurate statistics is serious and asks whether one might not be better off with no indicators at all than with highly misleading ones as currently in use.

Gross presents a general model for an international system of social accounts. According to the model, the state of any nation at any time period can be analyzed in terms of two interrelated, multi-dimensional elements: system structure and system performance, which are further broken down into 20 and 21 more specific elements, respectively. Gross stresses the usefulness of developing a comprehensive system description before constructing indicators for particular subsystems. (For Biderman and Gross: see also abstracts below).

Two other chapters, Biderman on "Anticipatory Studies and Stand-By Research" and Rosenthal, R.A., & Weiss, R.S. on "Problems of Organizational Feedback Processes" draw attention to more specific aspects and uses of social indicators research.

Biderman, A.D. Social indicators and goals. In R.A. Bauer (Ed.), Social indicators. Cambridge, Mass.: M.I.T. Press, 1966.

The author discusses existing social indicators in terms of their relationships to national goals, the ways in which such statistical series originate, and the multiple uses to which they are put. One of Biderman's objectives is to convince the reader that the problem of inadequate and inaccurate statistics is indeed a serious one and not a matter of trivial technical niceties. Crime rates are taken as a case example of a set of indicators with such serious problems that we might be better off with no indicators at all than with the highly misleading ones that are used. Biderman explores the constraints on how we might set up an ideal set of social indicators for evaluating the state of society. (G)

Duncan, O.D. Developing social indicators. Proceedings of the National Academy of Sciences, 1974, 71(12), 5096-5102.

Recent progress in developing social indicators is described in terms of six activities. In regard to social bookkeeping, the number of domains covered by population surveys is being expanded, and survey data are being more widely disseminated. In social accounting, demographic stock-flow schemes show promise of integrating systems of social statistics. Social science theories have provided models of achievement and other social processes. Social forecasting is potentially an important component of work on social indicators,

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but a new definition of the purpose of forecasting is needed. The practice of social reporting is best exemplified in the work of recent commissions. Social advising, while it draws upon social indicators, involves functions that cannot be performed by any system of indicators alone. The author concludes that the long-run effect of developing social indicators is not calculable; however, social indicators have the power to alter our fundamental ideas about human desires and possibilities, which in turn may change society. (G)

Duncan, O.D. Toward social reporting: Next steps (Russell Sage Foundation Social Science Frontiers Series, No. 2). New York: Russell Sage Foundation, 1969.

The author expresses concern over the dangers that might occur if the initial and somewhat confused enthusiasm with social indicators is allowed to motivate promises of social accounting systems before such promises can be fulfilled. He thus is concerned with the steps that should be taken so that initial enthusiasm is not dampened and there is a "strengthening of commitment" among those who are called upon to do the work. Five "steps" are thought to be either the wrong ones to take or to have the lowest priority. These are (1) developing social accounts systems; (2) construction of composite indexes; (3) deciding what types of measures ought to be included in social reports; (4) deciding which agency should be responsible for publishing which social report; and (5) use of social indicators to evaluate social programs. The author considers the problem of measuring social change as the most immediate task to be performed. The positions of the "theorist" and the "inductivist" on this measurement issue are presented with the author opting for the latter approach on pragmatic grounds. He most strongly supports an approach to indicator development that combines the use of existing data with those that are newly collected. This approach is termed "replication of base-line studies," and it is pointed out that this approach (1) should have the greatest marginal return for a given input of resources and (2) should be encouraged since it is the strategy least likely to be adopted in the ordinary course of events. Examples of replication studies and guidelines for conducting such studies are presented. (G)

Dunn, E.S. The national data bank movement in the United States. Proceedings of the Business and Economic Statistics Section of the American Statistical Association. Washington, D.C.: American Statistical Association, 1973.

This article is a critical review of the national data bank movement in the United States. It considers the Ruggles Committee Report, the Dunn Report, and the Kaysen Committee Report. The author points out that, at present, this movement is not making progress. He argues that both the data bank movement and the currently popular social indicators movement have not, in their interest in statistical reform, considered the issues of statistical system design. According to the author, proponents of both these movements believe that information problems can be solved by reapplying extant procedures to a wider range of needs and problems with more efficiency. He argues that this belief is questionable and that statistical reform must be conceived of in a broader fashion. (G)

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van Dusen, R.A. (Ed.). Social Indicators 1973: A review symposium. Washington, D.C.: Social Science Research Council Center for Coordination of Research on Social Indicators, 1974.

Following the publication of Social Indicators 1973, an international review symposium met to discuss and evaluate the potential utility of the document. The chapters in this book present the essence of the commentary at the symposium. Chapter 1 identifies the themes in the symposium discussions and provides an overview of the proceedings. Chapters 2 and 3 place Social Indicators 1973 in the context of the national social indicator reports of Sweden, Norway, France, England, and West Germany. Chapter 4, by Stephen Fienberg and Leo Goodman, is especially recommended as additional reading; the chapter reviews statistical and methodological problems and procedures in preparing social indicator reports. (R/G)

Educational Policy Research Center. Toward master social indicators (SRI project 6747, Research Memorandum EPRC-6747-2). Menlo Park, Calif.: Stanford Research Institute, 1969.

Key considerations in the development of a comprehensive national social data system are described. Processes for aggregating low-level indicators into composite indicators ("master indicators") are proposed. The authors present tables of attainment categories, subcategories, and possible indicators for each of seven areas related to the individual and society. (G)

Gross, B.M., & Straussman, J.D. The social indicators movement. Social Policy, 1974, 5(3), 43-54.

The authors examine different foci, cross-currents, and future orientations of the social indicators movement that are the result of heterogeneous interests and needs. Foci are shown to range from the simple collection or analysis of social information to the articulation of social goals, the preparation of social reports, and the development of social accounts. The cross-currents include noneconomist professionalism, broadband economism, humanism, statisticism, conceptualism, radicalism, and managerialism. The future orientations point toward a more tightly managed corporate society, on the one hand, and a more humanist, democratic, egalitarian postindustrialism, on the other. Examination of these elements of the indicators movement is made from both historical and political perspectives. (G)

Gross, B.M. (Ed.). Social intelligence for America's future: Explorations in societal problems. Boston: Allyn and Bacon, 1969.

The chapters in this book are the reorganized and slightly revised articles previously published in two volumes of The Annals of the American Academy of Political and Social Science (371 and 373, May and September, 1967) with Bertram Gross as Special Editor. In these chapters, a varied group of scholars, government officials, and journalists explore what is--or what they think should be--going on in a wide variety of specialized fields. One of the purposes of this collection, apart from probing the particular content areas, is to illuminate the variety of approaches to social indicators and goals. The 20 chapters were written by ten sociologists, five political scientists, three journalists, three economists, one law professor, and one physician. (G)

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Gross, B.M. The state of the nation: Social systems accounting. In R.A. Bauer (Ed.), Social indicators. Cambridge, Mass.: M.I.T. Press, 1966.

In this chapter, a general model for an international system of national social accounts is presented. The model integrates relevant concepts developed by economists, political scientists, sociologists, anthropologists, psychologists, and social psychologists. According to the model, the state of any nation at any period of time can be analyzed in terms of two interrelated, multidimensional elements: system structure and system performance. This system of accounts is intended to be descriptive rather than explicitly explanatory, although it is hoped such a descriptive system will form the basis for explanation. A full system of national social accounting thus supplies the concepts needed to (1) structure information on the past or present; (2) formulate goals; and (3) establish criteria for evaluation. More generally, it is the author's view that such a system is a conceptual system through which people try to represent concrete systems. General structural elements identified include (1) differentiated subsystems, (2) internal relations, and (3) external relations. General performance elements identified include (1) acquisition of inputs, (2) production of outputs for external use, and (3) investments made in the system. Structural and performance elements of the model are broken down further into 20 and 21 more specific elements, respectively, and examples relevant to organizations and nations are presented. The author concludes by setting out some of the problems that will likely be encountered in developing social indicators, but stresses the usefulness of working from a comprehensive system description to development of indicators for particular subsystems. (G)

Henderson, D.W. Social indicators: A rationale and research framework. Ottawa: Information Canada, 1974.

In contrast to approaches which rely heavily on statistical techniques to determine weights for components of composite indices, the author of this study relies primarily on inferences from theory and other conceptual methods. Henderson hypothesizes quality of lifegoal areas and social trends likely to have the greatest influence in shaping the future of Canadian society were identified. He then examines the goal areas in relation to the social trends in order to identify key areas of concern--those in which the greatest changes or perturbations will occur and, hence, the greatest need for societal action will arise. These theoretically derived areas of greatest need are then assigned relative weights reflecting their projected seriousness for Canadian society. Finally, Henderson identifies indicators for the need areas and applies these relative weights in forming composite indices made up of the indicators for different goal areas.

Johnston, D.F. National social indicator reports: Some comparisons and prospects. Washington, D.C.: General Assembly of the World Future Society, 1975. (ERIC Document Reproduction Service No. 109014).

This report provides comparisons among the social indicator reports of seven countries: Canada, France, Great Britain, Japan, Norway, the United States, and West Germany. The purpose of social indicator research in each country is to provide a means for developing more adequate answers to questions concerning present and emerging social trends. Limitations of the social indicator reports are that the data are purely descriptive of broadly aggregated trends and can provide only a general perspective of the emerging trends. The appendix is a comparison chart of social-concern coverage reports of the seven countries in areas of social concern including population characteristics; family characteristics; housing and community characteristics; social welfare and security of

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the population; health and nutrition; public safety and legal justice; education and training; work; income, wealth, and expenditures; leisure, recreation, and cultural activity; social mobility and social participation; and miscellaneous areas. (ERIC)

Land, K.C. Theories, models, and indicators of social change. International Social Science Journal, 1975, 27, 7-37.

The author reviews the history of the social indicators movement from its inception in the 1960s in the United States and describes the major contributions to the field. Five definitions of social indicators and problems with those definitions are presented, and the author reviews his own alternative definition and conceptual framework. Land's general framework for development of social indicators, which classifies indicators as being policy instrument descriptive indicators, nonmanipulable descriptive indicators, social system analytic indicators, output end-product descriptive indicators, second-order impact analytic indicators, or side-effect descriptive indicators, is used to illustrate the shortcomings of traditional social system model-building procedures. The author discusses how social indicators can be validated externally either by a social policy criterion or by a social change criterion, and he differentiates between two types of macro-sociological time series social indicator models, those concerned with the aggregate level of well-being and those concerned with equity. An alternative kind of model based on individual-level data (sociological life-cycle social indicator models) is described. (G)

Moore, W.E., & Sheldon, E.B. Monitoring social change: A conceptual and programmatic statement. Social statistics proceedings of the American Statistical Association. Washington, D.C.: American Statistical Association, 1965.

The authors discuss the monitoring of large-scale structural transformations in American society, the trends of these changes, and how public policy does and could affect those trends. Five major areas are suggested for monitoring: the demographic base, major structural components, distributive features, aggregative features, and welfare. (G)

Morss, E.R. The revolutionary and the marginal-positivist: Does the social indicators movement open up a new possibility for dialogue? Social Indicators Research, 1974, 1(2), 229-242.

The author argues that a deep schism exists within the social sciences between the "marginal-positivist," who feels meaningful change can be made through marginal steps in our social systems, and the "revolutionary," who feels fundamental alterations are needed before our systems will work for the betterment of mankind. This essay asks whether social indicators are compatible with the methodologies of each group, and if so, whether they offer a new possibility for a fruitful dialogue. The author notes that the revolutionary would benefit from engaging in the social indicator movement, since he or she would be forced to specify his/her goals concretely, measure progress toward these goals, and consider alternative approaches to achieving the goals. The marginal-positivist, on the other hand, would benefit from such engagement in that working with social indicators would cause him or her to adopt a broader focus on societal problems. Since, in the author's opinion, persons holding either the revolutionary or marginal-positivist perspectives will benefit from involvement in the social indicators movement, he concludes that social indicators offer hope for constructive dialogue between persons holding these two perspectives. (G)

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de Neufville, J. Social indicators and public policy: Interactive processes of design and application. New York: Elsevier North Holland, 1975.

This book is about quantative measures and their role in public decision-making. It addresses the twin questions of how to design indicators that can be useful to policy and how to design processes to make better use of such information.

de Neufville bases the analysis to these questions on the notion that there can be no meaningful measure without a theory and/or a hypothesis, at least. She contends that the intended purpose of making a measurement, therefore, has to play a role in the process of designing it and that the design process itself has to become part of a political process. If an indicator is to have a continuous and trusted meaning, its concepts and methods require some institutionalization. In addition, attention must be given to the practical constraints of data collection methods, which will partially determine the concept ultimately measured, and to subtle distinctions in structuring the data for presentation.

Specifically, the author discusses the role of quantitative measures in the first critical step of public policy, problem definition; the setting and context for future systems of indicator production and use in U.S. statistical policy; the problems and constraints on creating concepts; the criteria for choosing among data collection processes and recognizing how they may change concepts; choices for structuring data and their implications; ways of institutionalizing indicator production and creating public acceptance; the range of uses, from high-level public discussion of goals and policy to criteria for the allocation of program funds, and the effects of letting data become manipulable for short-term political considerations. The discussion draws on three major cases, the unemployment rate, the standard budget, and the crime rate, and illustrates how technicians, politicians, and the public can use more information to aid processes of public choice.

Sheldon, E.B., & Land, K.C. Social reporting for the 1970s: A review and programmatic statement. Policy Sciences, 1972, 3(2), 137-151.

The article reviews the state-of-the-art of social indicators research. The authors state that the interest in social measures of this type is due largely to the demand for information relevant to (1) policymaking, (2) monitoring the well-being of society, and (3) modeling aspects of the social system. The distinction between objective and subjective measures of the quality of life is discussed, and the fact that the definition and measurement of well-being requires a comparative perspective is noted. Elements that play a key role in linking social measurements to social policies are delineated, as are three criteria for the selection of areas to be measured or of particular measures themselves. The authors review the work that has been accomplished in developing social indicators in the areas of public safety, legal justice, and youth. They then present several recommendations that would extend work in these and other areas of social concern. Among these recommendations are (1) a research and development strategy; (2) an organizational structure for the conduct of social indicators research; and (3) coordinating mechanisms that will monitor and coordinate activities, both within and outside of government. (G)

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Sheldon, E.B., & Moore, W.E. (Eds.). Indicators of social change: Concepts and measurements. New York: Russell Sage Foundation, 1968.

This volume focuses on the theoretical and practical concerns of measuring large-scale structural change in the country. The chapters, by a variety of authors, discuss the major component parts of our society. The 13 content-specific chapters are categorized into four areas: (1) the demographic base, giving an indication of aggregative population trends and their changing composition and distribution across the nation's surface, (2) major structural components of the society, examining the ways in which our society produces goods, organizes its knowledge and technology, reproduces itself, and maintains order, (3) distributive features of the society, looking at how the products of the society are allocated across the American population, and (4) aggregative features of the society, the ways in which the system as a whole changes with respect to its inequalities, variable opportunities, and social welfare. (G)

Sheldon, E.B., & Parke, R. Social indicators: Social science researchers are developing concepts and measures of change in society. Science, 1975, 188, 693-699.

This article reviews significant milestones and products associated with the "social indicators movement." Four areas of activity are highlighted: (1) statistical time series to measure social change, (2) evaluation research and social experimentation, (3) net national welfare measurement, and (4) national goals accounting. While the authors review recent attempts at improving the data bases in these areas, they warn that attempts to use social indicators in social accounting, social engineering, or evaluation efforts may be misguided. They conclude that the development and analysis of descriptive time series and the modeling of social processes are the most promising approaches to describing the state of society. (G)

Taeuber, C. (Ed.). America in the 70s: Some social indicators. Annals of the American Academy of Political and Social Science, Vol. 435, 1978.

This issue of The Annals was prepared under the special editorship of Conrad Taeuber. It is a collection of interpretive essays based on individual chapters of Social Indicators 1976. In addition to presenting interpretation of the data included in Social Indicators 1976, the authors offered comments and criticisms concerning the volume. While Social Indicators 1976 was regarded, generally, as an informative compilation of statistical data, concerns were noted for the lack of data in certain areas, the absence of cautionary remarks regarding data quality, and the lack of attention to prominent social issues in organizing the data for dissemination. Two articles are especially relevant to the preparation of social indicator reports. In "Social Indicators '76 and Perspective Canada II: Elixirs of Reason or of Sleep?" David Brusegard, chief of the social indicator unit of Statistics Canada, makes a brief comparison between the American and Canadian chartbooks. Brusegard concludes that neither volume was entirely successful in developing social indicators or in providing a social report. He argues that such efforts must, in the future, involve authors from outside the government if they are to be more successful. In "Postlude: Past, Present, and Future," Denis Johnston, editor of Social Indicators 1976, discusses prospects for the future in the areas of cooperative international efforts, improving the data base, constructing "counter indicators," providing projections and explanatory measures, and broadening the audience for social indicator reports. (R/G)

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United States Department of Commerce, Office of Federal Statistical Policy and Standards and Bureau of the Census. Social indicators 1976: Selected data on social conditions and trends in the United States. Washington, D.C.: U.S. Government Printing Office, 1977.

This volume is the sequel to Social Indicators 1973. It is a comprehensive collection of statistical data, presented in graphic form and descriptive of current social conditions in the United States. Eleven major social areas are examined in eleven separate chapters: Population; the family; housing; social security and welfare; health and nutrition; public safety; education and training; work; income, wealth, and expenditures; culture, leisure, and use of time; and social mobility and participation. Within each of those subject areas, certain topics of broad social interest - social concerns - are identified and treated in separate sections. In addition, international comparisons are made and further readings are suggested after each chapter.

Three broad types of indicators are distinguished: indicators of system performance, indicators of well-being, and indicators of public perceptions. The emphasis is on the latter two, that is, indicators which measure individual or family well-being and reflect results or outcomes rather than inputs of resources. The majority of the indicators are disaggregated according to a variety of background characteristics in order to reveal the relative position of different population groups with respect to the variable of interest. The disaggregations shown most frequently include race, age, sex, occupation, educational attainment or family income.

The statistical data in this report come from a wide variety of sources. These are listed in the tables which follow the graphs. In addition, brief summaries of each chapter as a whole are provided, drawing attention to the highlights of the data presented. The report refrains from lengthy interpretations of the data, due to their descriptive character, and instead refers the reader for more authoritative interpretations to Taeuber, C. (Ed.) (see reference). A 1980 report is in preparation.

United States Department of Health, Education, and Welfare. Toward a social report. Washington, D.C.: U.S. Government Printing Office, 1969.

The title of this volume was chosen to indicate that it is not a social report, but rather a step in the direction of a social report and the development of a comprehensive set of social indicators. What is known about progress toward generally accepted goals is presented for several areas: health, social mobility, the physical environment, income and poverty, public order and safety, and learning, science, and art. There is also a chapter on participation in social institutions, but because of the lack of relevant indicators in this area, it aspires to do no more than pose important questions. (G)

Zapf, W. Systems of social indicators: Current approaches and problems. International Social Science Journal, 1975, 27, 479-498.

Ten examples of operational social indicator systems from various countries are described. For each system, the following seven aspects are specified: (1) research objective, (2) system, (3) method of selection and weighting, (4) goal areas or life domains, (5) type and number of indicators, (6) data base from which the indicators were constructed, and (7) topics. With the aid of the examples, some general problems are discussed: (1) the functions of social

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reporting (measurement, evaluation, accounting, explanation, and innovation), (2) the nature of social indicators, and (3) the levels of analysis and components of welfare that enter into the analysis of welfare. The author concludes with a description of the SPES Project financed by the German Research Association and being carried out by the Social Policy Research Group of Frankfurt/Mannheim. (G)

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SOCIAL INDICATORS: THEORETICAL

Baumheier, E.C., Oborn, P.T., Conner, L.T., Slaughter, E.L., & Cook, C.L. Toward a comprehensive data bank for social indicators. Denver: Denver University, Center for Social Research and Development, 1975. (NTIS No. SHR-0000523)

A conceptual framework defining a set of social indicators is presented that could be used to measure status as well as change in several areas of social concern. A composite list of social concerns drawn from the social indicators literature is discussed, and operational definitions are developed and compared to data presented in the Social Indicators Project of the University of Denver's Center for Social Research and Development in order to identify content gaps and to fix the limits of social indicators collection. The proposed comprehensive indicators system is designed to monitor change in quality of life with respect to economic, political, social, cultural, and environmental components. The data system is designed to handle information collected at the county level, but it could be disaggregated to the community or aggregated to the state level without presenting serious problems. It is pointed out that, although a comprehensive indicator system at the county level would present some practical difficulties in data collection, the system would provide benefits to county-level planners as well as to state and federal decisionmakers because it calls attention to change in all the domains of human experience. An appendix describes the Social Indicators Project and contains a bibliography. (NTIS)

Brand, J. The politics of social indicators. British Journal of Sociology, 1975, 26(1), 78-90.

The author discusses the development of social indicators in terms of their relation to policy goals and their use by political organizations. In constructing indicators, the link between them and policy goals is often unclear because policy goals are not explicit. In addition, goals change over time, and indicators may not be relevant to the changed policies. Social indicators may be used by political organizations to vindicate their policies or as political weapons against opponents. (PSYCH ABS)

Campbell, A., & Converse, P.E. (Eds.). The human meaning of social change. New York: Russell Sage Foundation, 1972.

This book was commissioned by the Russell Sage Foundation as a companion piece to Indicators of Social Change (Moore & Sheldon, 1968). Whereas Moore and Sheldon were concerned with various kinds of hard data, typically sociostructural, this book is devoted chiefly to so-called softer data of a more social-psycholocial sort: attitudes, expectations, aspirations, and values. The purpose was to set forth a statement of the most significant dimensions of psychological change, a review of the state of information regarding them, and a projection of the measurements needed to improve understanding of these changes in the future. Topics include community, family and kinship, work, leisure, the American electorate, and Negro population, the criminal justice systems, and alienation. (G)

Fox, K.A. Social indicators and social theory. New York: John Wiley and Sons, 1974.

The author proposes a system of social accounts and indicators, drawing on concepts from sociology, economics, and ecological psychology. Theoretical models are proposed that combine economic and noneconomic variables and are applied at the national and community levels and to higher education and earnings as a function of occupation. The author discusses some illustrative

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models of a world economy and the manner in which economic policies adopted by one nation affect prices and incomes in other nations. The history of the development of econometrics is summarized and compared to the situation in social indicators and models. (G)

Garn, H.A. Models for indicator development: A framework for policy analysis. Washington, D.C.: Urban Institute, 1976. (ERIC Document Reproduction Service No. ED 123 780)

This document summarizes aspects of a current approach to social indicator research and related problems in policy analysis generated by an interest in isolating major sources of variability in the generation of human welfare and developing indicators associated with welfare-generating processes. A set of models being developed for indicator research is described, and some of their implications explored. Suggestions are made for assessing performance from both an institutional perspective and a social perspective. The first section considers sources of variability in welfare generation that can be traced to the processes of transforming resources into welfare outcomes through production or consumption activities. The second section discusses extending the models to include sources of variability arising from the institutional settings in which these activities occur. The third section illustrates implications of these models for identifying the information requirements of the client and service providers of a prototypical public school system. (ERIC)

Land, K.C., & Spilerman, S. (Eds.). Social indicator models. New York: Russell Sage Foundation, 1975.

The chapters in this book are the product of a conference on Social Indicators Models held in 1972 at the Russell Sage Foundation. They are divided into two major groups: 1) replication models built on the basis of data from repeated cross-sectional sample surveys; and 2) longitudinal and dynamic models based on repeated observations of the same individuals or structural units.

Although the chapters deal with a variety of topics, there are similarities. First, each chapter addresses a specific set of social indicator data and constructs a corresponding analytical model with which to assay the various components of changes in the indicators. Second, they refrain from developing theoretical models which are too broad for direct practical purposes. In addition, they place emphasis on the analysis of social change and the interrelationships among social indicators for the purpose of improving social reporting and the guidance of social policy.

The chapter by Spilerman on "Forecasting Social Events" focuses on several conceptual issues in model construction and forecasting social indicators. In particular, he discusses some conditions under which the forecasting of social variables is exceedingly difficult.

Laszlo, C.A., Levine, M.D., & Milsum, J.H. A general systems framework for social systems. Behavioral Science, 1974, 19(2), 79-92.

In this paper, the relationship between general systems theory and social systems is explored, including an introduction to the general system characteristics that are basic to all systems. The basic dynamic properties of systems are described in terms of time lags or inertia, time delays, positive feedback or growth, negative feedback or homeostasis, stability, and thresholds. Building on these basic concepts, the authors describe control systems, optimization and performance criteria, and complex and hierarchical systems. Emphasis is placed on the discussion of social indicators and social accounts in the social theoretic context. (G)

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Maloney, J.F. (Chair). Progress in development of social indicators. Symposium presented at the Twenty-Eighth Annual Conference on Public Opinion Research. Public Opinion Quarterly, 1973, 37(3), 423-487.

These papers were presented: N. Zill and R. Parke, Social Science Research Council, Center for Coordination of Research on Social Indicators; "From Self-Report to Social Report: Uses of Survey Data in Social Indicators"--the social indicators' potential of existing survey and poll archives has yet to be adequately exploited, and therefore the SSRC Center for Coordination of Research on Social Indicators is working to improve the utilization of survey data. J.P. Robinson, Survey Research Center, University of Michigan; "On the Correspondence between Subjective and Objective Social Indicators"--several hypotheses were discussed to explain the lack of correspondence often found between people's subjective evaluation of their quality of life and their objective behaviors. J.R. Goeke, Opinion Research Corporation; "Three Decades of Experience with Social Indicators: Are They Useful in Forecasting?"--six classes of indicators were discussed that have been very predictive but are largely ignored. (G)

McIntosh, W.A., Klonglan, G.E., & Wilcox, L.D. Theoretical issues and social indicators: A societal process approach. Policy Sciences, 1977, 8(3), 245-267.

Well-being involves various levels: the individual, the institutional-distributive, and the societal. These levels are interrelated. Social indicators of well-being must be theoretically based in such a way as to take into account these levels. A societal process model is proposed to describe the levels of society and the nature of well-being at each level. Example social indicators are provided regarding the output and distribution of well-being, the effect of policy manipulable and nonmanipulable inputs, and the secondary consequences of inputs. The author suggests four benefits of using a societal process model. (1) The state of the nation in the fullest sense could be monitored and assessed. (2) The effects of certain changes in the societal environment could be traced through the entire system, in order to ascertain the type and degree of change and adjustment necessary for the nation to readjust to the new environmental conditions. (3) A societal process model would allow one to ascertain the short- and long-term effects of major societal policies on the individuals, institutions, values, and physical environment of a nation. (4) Intersectorial policymaking and planning would be facilitated if a societal process model were fully operationalized and in use. (G)

Newfield, J.W., & Duet, C.P. Implications of quality of life for goal setting tasks of curriculum workers. Education, 1976, 97(2), 126-135.

The authors identify a trend in the social sciences toward providing the public with information that can be used for a variety of policy determination tasks. The term "social indicators" is used to describe various characteristics intended for these social reports. Indexes of quality of life, a popular media description of some social indicators, represent a multidisciplinary summary of characteristics people value. As such, they offer a unique resource to the curriculum worker concerned with the task of goal identification. As an example of the use of this resource, a survey of characteristics listed in quality of life indexes was made. This list was then compared with the goals of American education as formulated by several major commissions. In general, most of the traditional aims of education were reiterated in the indexes, indicating that quality of life indexes are a potentially useful resource for the curriculum worker. Some possibilities for new directions in aims of education are proposed. (PSYCH ABS)

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Organization for Economic Co-operation and Development. Measuring social well-being: A progress report on the development of social indicators. Washington, D.C.: OECD Publications Center, 1976.

This report summarizes the effort of the OECD since 1973 to develop a comprehensive set of social indicators which can be used to "better focus and enlighten public discussion and decision-making" (p. 157) as well as improve social reporting and social analysis. It describes the extent of consensus among member countries as to the indicators which are currently available and those which have to be developed and implemented in ways that will permit member countries to share information on the progress they are making in achieving their own social goals.

The report is divided into five parts. Part I reviews the working methods and the approach of the OECD to indicator development. Part II describes guidelines for the development of social indicators while Part III provides a brief list of social concerns and social indicators. Part IV further specifies the contents of the social concerns and sub-concerns and discusses and lists the corresponding indicators. The areas of social concern discussed are: health, individual development through learning, employment and the quality of working life, time and leisure, personal economic situation, physical environment, the social environment, personal economic situation, physical environment, the social environment, personal safety and the administration of justice, and social opportunity and participation. Part V discusses the potential uses of social indicators. In addition, two appendixes present this list of concerns and examine the existing availability of data required by the proposed indicators.

As an illustration of the general approach taken by the OECD study, the area of social concern "individual development through learning" is broken down into lists of concerns, sub-concerns, and sub-sub-concerns which in turn are translated into social indicators, that is educational results which can be statistically monitored.

Pampel, F.C., Land, K.C., & Felson, M.E. A social indicator model of changes in the occupational structure of the United States: 1947-74. American Sociological Review, 1977, 42(6), 951-964.

This paper presents a 10-equation dynamic structural equation model that shows how changes in the occupational structure of the United States affect each other and are affected by economic, technological, and institutional conditions. The model postulates a recursive flow of causation (no explicit feedback relationships) from changes in sectorial (agricultural, manufacturing, services) demand and productivity to changes in the distribution of occupation by sector, bureaucratization, and status level. Application of the model to data from past years (1947 to 1972) allows conditional forecasts to be made and validated against new data. The equations fit the observed data well, lack demonstrable autocorrelation of disturbances, and forecast the 1973 and 1974 values with considerable accuracy. While changes in sectorial demand and productive efficiency were substantial during the 1947-1972 period, the rates of change in these driving variables of the model have decreased in the 1970s. If these rates of change continue to decline, then the model leads to the prediction that there will be a contraction in the rate of growth of high status jobs, which in turn implies a decline in the rate of upward occupational mobility in the absence of other counterbalancing structural changes. (G)

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Parke, R., & Seidman, D. Social indicators and social reporting. In C. Taeuber (Ed.), Science in the 70s: Some social indicators. Annals of the American Academy of Political and Social Science, 1978, 435 (January), 1-22.

Doubts about the easy equation of economic growth and social progress in the 1960s, led to renewed interest in social measurement and to the birth of the "social indicators movement." Social Indicators, 1976, (US Office of Management & Budget), a product of that interest, can be read as both a report on social conditions and trends in the US and as a progress report on social indicators research. The volume is best understood against the background of the social indicators movement and of the research it has stimulated. Several research traditions are joined together in the social indicators movement, but they share a concern for measurement, analysis, and the reporting to a general audience of aspects of social conditions. The tradition best reflected in Social Indicators, 1976 stresses monitoring and reporting social change. Research in this tradition emphasizes conceptual and methodological development of measures, improvements in available data bases, development of social indicator models, and social reporting. In its data selection, treatment of data, organization, and commentary, Social Indicators, 1976, is an improvement over Social Indicators, 1973, though its analysis is notably insufficient. Most of the improvements which should be found in future editions depend upon continued progress in the development of social indicators. 3 Tables, 3 Charts. (SOCIOL AB)

Rosove, P.E. A trend impact matrix for societal impact assessment (Monograph 5). Los Angeles. USC, Center for Futures Research, 1973.

This paper suggests a logical approach to analyzing societal trends and presenting these to policy makers. It is built on the assumption that a data storage and display system is needed to facilitate open discussion among planners, policy makers, researchers, and the general public. The author offers and discusses examples of trend impact matrices for the analysis of criminal justice roles and education and training requirements.

Raynauld, A. Social indicators: The need for a broader socioeconomic framework. Canadian Public Administration, 1975, 18, 99-103.

The author describes the general approach followed by the Economic Council of Canada in developing variables in models of various aspects of the social system. From the Council's point of view, society is seen as having the basic goals of well-being and equity; all other objectives are assumed to be contributory to these two primary goals. The social system is divided into various areas of concern, corresponding to existing institutional realities. The social indicator framework employed reflects the full array of outputs and related inputs for each area. The area of education is provided as an example of one of the ways in which the Council has approached the development of social indicators. (G)

Shonfield, A., & Shaw, S. (Eds.). Social indicators and social policy. London: Heinemann Educational Books, 1972.

The essays in this book are the contributions made by the European scholars to the discussion at the joint conference of the British and American Social Science Research Councils (SSRC) at Ditchley in 1971. The editors describe them as "work in progress" which illustrate some of the conceptual and statistical problems which arise in the construction of social indicators. The book concentrates on three topics: measurement of crime, health, and education.

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In addition, brief discussions of the historical development of social indicators, their typology and conceptual structure as well as their use (market) are included.

An underlying theme of the collection is the question of what the minimum of social theory is that is necessary to advance towards an improved measurement of social welfare. There is expressed concern that indicators might become vindicators, that is, a means of giving an objective appearance to subjective value judgments. Furthermore, there is general agreement that the information provided by present national statistical data is inadequate and needs to be refined.

The article by M.A. King on "Primary and Secondary Indicators of Education" is a point in case. King contends that many of the educational statistics "are in the form of figures relating to stocks rather than flows" (p. 53). They provide figures, e.g., on the number of students in different educational establishments but little information about where they come from or where they go to. Using a model which identifies 17 different categories of educational stages in an individual's life, King presents and discusses a matrix for males in England and Wales for the year 1966 which shows the flows of individuals between the different stages of the system in a given time period.

Sismondo, S. Social indicators for policy research and democratic action: A paradigm and some examples (Report 73-119.). New York: Joint Meeting of the American Sociological Association and the Rural Sociological Society, 1973. (ERIC Document Reproduction Service No. ED 082 908)

The primary purpose of this paper is to present a possible means to establish a new social indicators intelligence system that embodies a relations testing capacity. Major ideas defined and described include social indicators, theory, model, policy research, and democratic action. A paradigm covers the movement from theory to model and action. Three examples are used to show the inference from model to reality. It was noted that a system for the construction, collection, and analysis of social indicators should not be isolated from other intellectual and political endeavors. It is argued that a single best utilization of social indicators research exists within the policy research and analysis domain that will respect the functioning of the democratic system. (ERIC)

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SOCIAL INDICATORS: METHODS

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Anderson, J.G. Causal models and social indicators: Toward the development of social systems models. American Sociological Review, 1973, 38(3), 285-301.

James Anderson describes his attempt to use structural equation modeling techniques to develop a model of the health care system in the state of New Mexico. The model that is derived specifies hypothesized cause-and-effect relationships between social, demographic, and economic time series. Of particular interest is the suggestion that structural equations models of this type can be used to project the likely consequences of possible state and federal actions designed to affect health care delivery. This article provides a good introduction to more recent work in structural equation modeling of time series (for example, Land, K.C., & Felson, M.E. A general framework for building dynamic macro social indicator models: Including an analysis of changes in crime rates and police expenditures. American Journal of Sociology, 1976, 82, 565-604; and Anderson, J.G. Causal models in educational research: nonrecursive models. American Educational Research Journal, 1978, 15(1), 81-97.) (R/G)

Andrews, F.M., & Crandall, R. The validity of measures of self-reported well-being. Social Indicators Research, 1976, 3(1), 1-19.

Using a new analytic approach, construct validity estimates were developed for proposed social indicators of self-reported well-being. Two separate investigations are reported: the first involved data on six aspects of well-being each assessed by six methods from 222 adults in one geographic area; the second, a partial replication and extension, involved a more limited set of indicators measured on a sample of 1,297 respondents representative of all American adults. The results provide evidence that perceptions of well-being can be measured by single questionnaire or interview items using any of four formats with validities in the range of 0.7 to 0.8 (implying that roughly half to two-thirds of the variance is valid) and with correlated method effects contributing less than 10% of the total variance. Two other formats, however, were markedly less valid. These findings are important in view of part criticisms of "subjective" social indicators as lacking in validity, and the findings can guide current efforts to develop new ways to assess the quality of life. Methodologically, the article illustrates the feasibility and utility of deriving parameter estimates of structural equation models of multimethod-multitrait data using Joreskog's LISREL algorithm. The possibility of deriving validity estimates in this way, even when the data include correlated errors, opens new and important oppotunities to precisely assess the amount of error variance in much social science data. (G)

Bennett, K.F., & Blackburn, R.T. Social indicators of institutional commitment. Journal of Industrial Teacher Education, 1975, 13, 48-52.

The paper describes how five indicators were developed to measure the comparative degree of commitment of a group of community colleges to their vocational-technical areas. The criteria of a "good" measure are developed, the findings of a pilot study are displayed, the indicators are critiqued, and alternatives are suggested. (G)

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Box, G.E.P., & Jenkins, G.M. Time-series analysis: Forecasting and control. San Francisco: Holden Day, 1970.

The book is concerned with the building of models for discrete time-series and dynamic systems. It describes in detail how such models may be used to obtain optimal forecasts and optimal control action. All the techniques are illustrated with examples using economic and industrial data. In Part I, models for stationary and nonstationary time-series are introduced, and their use in forecasting is discussed and exemplified. Part II is devoted to model building and procedures for model identification, estimation, and checking, which are then applied to the forecasting of seasonal time-series. Part III is concerned with the building of transfer function models relating the input and output of a dynamic system computed by noise. In Part IV, it is shown how transfer function and time-series models may be used to design optimal feedback and feedforward control schemes. Part V contains an outline of computer programs useful in making the needed calculations and also includes charts and tables of value in identifying the models. (G)

D'Agostino, R.B. Social indicators: A statistician's overview. Social Indicators Research, 1975, 1, 459-484.

In this article, the problem areas of social indicator research that are of concern to the statistician are considered. Among these are the purposes of social indicators, what social variables should be considered as conceivable variables related to quality of life, what data should be collected (taking into account the difficulty of not being able to directly measure variables of interest), how one collects the data (which is usually in the form of a time series) guarding against multicollinearity, and how the collected data should be handled and analyzed. The author discusses why in social indicator research, the secular trends, cyclical movements, seasonal variations, and irregular fluctuations must be taken into account. Techniques are discussed for relating lead indicators in one time period to coincident indicators in another period. Finally, a select bibliography is presented on canonical correlation, forecasting, indicators and index numbers, path analysis, regression analysis, simulation techniques, time series analysis, and other areas useful in analyzing social indicator data. (G)

Firestone, J.M. The development of social indicators from content analysis of social documents. Policy Sciences, 1972, 3(2), 249-263.

The author distinguishes his conception of social indicators (that they should be indicators of theoretically central concepts) from the view held by Marcus Olson and others (that social indicators should be indicators of normatively central concepts). Five types of theoretical concepts that social indicators should assess are presented. These include (1) the physical movements of goods, services, and communications viewed from a social exchange or directed action perspective (i.e., transactions); (2) the noncultural products of past transactions that provide part of the context of ongoing transactions; (3) the documentary products of past transactions, art, film, media records, literary products, political communications, and other documents that provide another portion of the context of transactions; (4) the relational configuration of psychological states of individual members of a social system; and (5) the physical characteristics related to transactions (e.g., land use patterns, climate). Five data types are associated with each of these theoretical concepts: (1) interview response data, (2) institutional records, (3) artifactual data, (4) simple observation, and (5) contrived observation. The author shows that little effort has been made to use artifactual data to assess cultural

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products and group psychological states. A review of the literature is summarized that suggests sizable crosstemporal correlations may be found between indicators of national motives derived from content analysis of school texts and various national social (condition) indicators. The author argues that researchers should turn away from survey research as a tool for generalizing analyses of society. Instead, more effort should be made to analyze literature, art, film, songs, and so on in developing social indicators. (G)

Glass, G.V., Willson, V.L., & Gottman, J.M. Design and analysis of time-series experiments. Boulder, Colorado: Colorado Associated University Press, 1975.

This work is an attempt at an integrated treatment of the methodological developments related to time-series experimental design during 1966-1974. Subjects include time-series experiments and the investigation of causal claims, variations on the basic time-series experimental design, estimating and testing intervention effects, sources of invalidity in time-series experiments, concomitant variation in time-series experiments, and spectral analysis of time-series. The book is a technical treatment that builds on the work of G.E.P. Box and J.M. Jenkins, Time-series analysis: Forecasting and control, 1970. (G)

Hastings, P.K. (Ed.). Survey data for trend analysis. Washington, D.C.: Social Science Research Council, Center for Coordination of Research on Social Indicators, 1974.

This book is an index to all questions asked in two or more years in the American national survey holdings of the Roper Public Opinion Research Center. Each entry consists of the question wording, the survey organization that asked the question, the number and date of the survey, and the number of the question. The same information is provided for variant wordings of the question. The index provides sufficient information to permit quick identification of survey data items likely to be useful in constructing time series. As an aid to researchers undertaking secondary analysis of survey data, a short guide to survey archive research is included. (G)

Hauser, P.M. Social statistics in use. New York: Russell Sage Foundation, 1975.

The purpose of this book is to provide the educated lay reader with information on how statistics, especially those collected and compiled by government, are used, and in so doing to show justification for the census, government surveys, and other statistical undertakings that require public cooperation. The focus is mainly on social, as distinguished from economic, statistics, although the boundary line is not always clear and the statistics examined often have both social and economic implications. A number of experts were asked to prepare memoranda on the nature and uses of data in their fields of specialization, and the memoranda were then edited and rewritten into a nontechnical and uniform style by the author. The book is divided into chapters on thirteen content areas as well as chapters on the need for statistics, on public opinion polls, and on social indicators. (G)

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Hellwig, Z. A method for the selection of a complex ... II of Social indicators: Problems of definition and of selection (No. 30, Reports and Papers in the Social Sciences). Paris: UNESCO Press, 1974.

This article describes the Wroclaw Taxonomic Method and applies the method to the measurement of the progress being made by developing nations based on sociological and economic indicators. Weights for indicators that describe particular aspects of development status are determined by the "distance" of individual indicators from one another (derived from correlation matrices). Indicators that are strongly interrelated are assigned equal weights. Indicators that are to be combined with these "compact sets of indicators" for various monitoring purposes are assigned weights proportional to their "distance" from these compact sets. The method is described with numerical examples, and two taxonomic graphs based on the assessment of development status are presented. The author argues that the issue of assigning weights to components in a composite index is closely related to the matter of variable selection, that is, that the weighting problem can be expressed in terms of reducing an initial list of variables. This perspective is used to support the application of the taxonomic approach. (R/G)

Jaeger, R.M. An abundance of answers in search of questions: On a methodology of assessment through indicators. Paper presented at the Annual Reading of the American Educational Research Association, New York, 1977. (ERIC Document Reproduction Service No. ED 135 872)

Some observations are presented on a social indicators approach to statewide educational assessment. The context of the observations is the Oregon Department of Education model for educational planning. Much of what is said can also be applied to educational planning and program evaluation at the federal level or in large school systems. For the purposes of this discussion, a social indicator is defined as any statistical time series on a quantitative variable that is measurable and time-referenced. One-shot measures are excluded, as are sequences of qualitative descriptions. Operating from the premise that agencies may be forced to build educational indicators from extant data collections, some of the methodological problems inherent in this approach are discussed. Some possible solutions are proposed, both short-term and long-term, for measurement issues such as specifications bias, construct validity, and political validity. Possible areas for research and experimentation leading to more ideal sets of educational indicators are described. (ERIC)

Little, D. Social indicators, policy analysis, and simulation. Futures, the Journal of Forecasting and Planning, 1972, 4(3), 220-231.

This article suggests that simulation models would serve as useful tools for developing and using social indicators in the policy-making process. One such model (STAPOL) is described, and current and future applications for this type of simulation are discussed. (ERIC)

Ostrom, C.W., Jr. Time-series analysis: Regression techniques. Beverly Hills, California: Sage Publications, 1978.

This slim monograph (83 pages) provides a very readable introduction to the use of regression analysis with time-series data. Many example analyses and illustrations describing the properties of time-series data are presented to illuminate the discussion. An example involving data that describe the status of United States defense expenditures in light of current amounts spent by the U.S.S.R. and amounts spent by the United States in past years is developed in

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the texts and used to explain several key concepts. Major topics that are discussed include regression analysis with nonlagged and lagged variables, forecasting, and the identification of alternative time-dependent processes. This text provides an excellent introduction to articles describing specific social indicator model-building techniques, such as Anderson (1973). (R/G)

Wachs, M., & Kumagai, T.G. Physical accessibility as a social indicator. Los Angeles: University of California School of Architecture and Urban Planning, 1972. (NTIS No. PB-212-740)

A discussion is presented of the ways in which accessibility to employment and urban services constitutes an important measure of the quality of urban living and how accessibility might, therefore, be included as an important component of a social report for a city or region. A conceptual framework is presented for measuring accessibility in terms of the ease with which citizens may reach a variety of opportunities for employment and services. This framework, which could be used to evaluate transportation and regional plans, differs from current approaches based upon travel volumes and travel times. The use of the proposed measures of accessibility is illustrated with data on accessibility to employment and health care facilities in Los Angeles, and these data are interpreted to illustrate differences as a function of location and socioeconomic status. (G)

Webb, E., Campbell, D.T., Schwartz, R.D., & Sechrest, L. Unobtrusive measures: Nonreactive research in the social sciences. Chicago: Rand McNally, 1966.

The authors review methods of obtaining social science research data by means other than interviews or questionnaires with the dual purpose of broadening social scientists' range of utilized methodologies and encouraging creative and opportunistic exploitation of unusual measurement possibilities. Their principal objection to the use of interviews and questionnaires is that they tend to be used alone and hence introduce systematic bias. These techniques should, therefore, be supplemented by methods that assess the same social science variables but introduce a different sort of methodological bias. In short, multiple operationalism is called for and measurement strategies are introduced that (1) can cross-validate traditionally used procedures and (2) do not require the cooperation of a respondent and, therefore, do not themselves contaminate the response. General categories within which these measurement strategies are presented include (1) physical traces (i.e., erosion and accretion); (2) archival data (both "running records" and episodic and private records); (3) simple observation; and (4) continued observation. Many examples of measures are presented. (G)

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SOCIAL INDICATORS: EDUCATION

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Educational Testing Service. Educational indicators: Monitoring the state of education. Princeton, New Jersey: Author, 1975.

This volume is a collection of six papers that were presented at an invitational conference on educational indicators. The papers include (1) E.B. Sheldon, "The Social Indicators Movement," (2) D.D. Gooler, "The Development and Use of Educational Indicators," (3) S.B. Withey, "Quality of Life as an Educational Outcome," (4) M. Olson, "Measurement and Efficiency in Education," (5) W.J. Cohen, "Educational Indicators and Social Policy," and (6) S.J. Mushkin and B.B. Billings, "Measures of Educational Outcomes in Developing Countries." (G

Elliott, E. Social indicators and program evaluation. Paper presented at the Adult Education Research Conference, St. Louis, Missouri, 1975. ERIC Reproduction Service No. Ed 110 852)

The paper examines social indicators as a way of evaluating macro-level adult education programs. In general, social indicators deal with social factors that affect the quality of life of the population. Social scientists are recognizing the need for both economic and social indicators. Even as the need for social indicators is discussed, the problems that may be associated with their use (questions of measurement, the reduction of social indicators into economic terms, the definition of quality of life) are recognized. Typical social indicators include health, public safety, education, employment, income, housing, leisure and recreation, and population. In assessing adult education programs with respect to social indicators, the time factor seems to be crucial. In a model evaluation, the procedure moves from focusing on a social concern (one source of program objectives) to identifying appropriate social indicators, to collecting evidence, to referring back to the social concern, and the cycle starts again, presumably at a more advanced point in relation to the social concern. All adult educators need to work to establish evaluative procedures that attend to qualitative as well as quantitative aspects of program output. (ERIC)

Felson, M.E., & Land, K.C. Social, demographic, and economic interrelationships with educational trends in the United States: 1947-74 (Working Paper in Applied Social Statistics No. WP7610). Urbana, Illinois: University of Illinois at Urbana-Champaign, Department of Sociology and Social Science Quantitative Laboratory, 1977.

This paper presents a 34-equation model linking trends in educational enrollments, attainments, and organizations to one another and to certain social, demographic, and economic trends for the United States during the years 1947-1974. The model-building strategy employed integrates many of the ideas of Stone's demographic accounting approach. (G)

Ferriss, A.L. Trends in Education and training. In C. Taeuber (Ed.), America in the 70s: Some social indicators. Annals of the American Academy of Political and Social Science, 1978, 435 (January), 157-178.

This article is a commentary on chapter 7 "Education and Training" in Social Indicators, 1976. It seeks to interpret the trends revealed by the statistics and addresses the general public and public educational decision makers.

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cators. Social Indicators Research, 1974, 1, 73-84.

The author claims that most turning points in educational indicators are not cyclical but respond to major societal events. Three examples are presented. (1) The probability of a 10th grader continuing to the 11th grade has increased linearly for 60 years, being affected positively by unemployment and negatively by increase in GNP per capita and by military expansion. (2) Baccalaureate degrees per high school graduate four years earlier declined with the expansion of secondary education following the 1890s, rose after World War I and fell as the Depression approached. A major turning point occurred after World War II, and the indicator peaked in 1950. (3) A current downward turning point in the school enrollment rate of 18- to 19-year-old males may have been prompted by a change in Selective Service policies granting exemptions to college enrollees. The author argues that interpreting turning points by identifying the forces that underlie and direct them would increase our knowledge of the cause-and-effect sequences that affect the educational system. He suggests that continuously monitoring educational indicators would facilitate the development of policy and programs to adjust to dysfunctional educational trends. (G)

Ferriss, A.L. Indicators of trends in American education. New York: Russell Sage Foundation, 1969.

Statistical time series on various aspects of education are presented along with discussion of the interpretation of the trends, criteria for the selection of an indicator, and different types of statistical series. Topics include enrollment, teachers, quality of education, graduates, trends in educational organization and finance, and educational attainment. (G)

Flanagan, J.C., & Russ-Eft, D.F. An empirical study to aid in formulating educational goals. Palo Alto, California: American Institutes for Research, 1975.

This study focuses on the effects of educational experience on an individual's quality of life in relation to the importance placed on particular dimensions of quality of life. The study used the "critical incident technique" with a national sample of persons to derive 5 dimensions of quality of life. To assess current status on quality of life, a nationally representative sample of men and women were chosen from the Project TALENT survey (ensuring the availability of background data). Participants were interviewed to gather information on their experiences, decisions, and perceptions related to the various dimensions of quality of life, and their current satisfaction vis-a-vis each dimension was determined. The study pinpoints the following areas of educational practice that should be developed further: (1) vocational guidance, (2) quality of teaching, (3) individualized instruction, (4) curriculum, and (5) personal support and guidance. (G)

Gitter, A.G., & Fishman, J.E. Social indicators of educational opportunity (CRC Report No. 68). Boston: Boston University Communication Research Center, 1973.

The authors developed two types of factor analytical social indicators--factor scores and basic variables--which were shown to apply in aggregating multivariate education data. State indicators of educational input and educational output for 1960 were computed. They were used as dependent measures in analyses of variance and covariance, with region, density, urbanization, percent of whites, personal income, and nonwhite migration as independent variables. The relationships between social indicators of educational input

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and output were tested, both with and without controlling for the context of the relationships. Procedures for computing both state and national indicators for a base year and any subsequent years are described. (PSYCH ABS)

Greenbaum, W. Measuring educational progress: A study of the national assessment. New York: McGraw-Hill, 1977.

This book provides a comprehensive evaluation of the goals, objectives, and procedures of the National Assessment of Educational Progress (NAEP). Separate chapters discuss NAEP's objectives and organizational development; its division of knowledge into subject areas; the subject-area objectives; exercise development; measurement of background variables; the sampling design and the exercise packages; reporting of results; past and future uses of the assessment; and social indicators and the reform of education. Highly critical of some aspects of NAEP, the study is followed by a response from the staff of the National Assessment. (ERIC)

Johnstone, J.N. Indicators of the performance of educational systems (IIEP Occasional Paper No. 41). Paris: International Institute for Educational Planning, 1973.

In this paper, discussion is restricted to indicators of educational system performance. By "educational system" is meant that system that is formally established within a country for the purpose of providing education according to the UNESCO definition of the term. What is said generally applies to indicators in other fields of the social sciences as well as to social and development indicators in general. The paper begins by establishing a theoretical model within which educational indicators can be defined and by discussing certain conceptual problems concerning the purposes for which indicators might be used and the methodological problems encountered in forming indicators. After a review of educational indicators developed to date, the paper develops a core of ten educational indicators and demonstrates two approaches to using them to map educational systems performance across and within nations. The paper concludes by outlining research that may be conducted to extend both the core of indicators and the methodology proposed. (ERIC)

Koshal, R.K., Gallaway, L.E., & Akkihal, R.G. Determinants of male and female higher education in the United States. Social Indicators Research, 1976, 3(1), 111-121.

In this paper, an attempt is made to estimate separately the male and female demand functions for higher education in the United States and to determine which variables affect the degree of demand differentially for the two sexes. Data for 45 of the states were accessed from the Digest of Educational Statistics, 1971, the Comparative Guide to American Colleges, 1972, and the Statistical Abstract of the United States. Ordinary least squares regression was used to estimate separate demand functions for male and female enrollment. In order to determine the relative importance of variables on male and female enrollment, partial enrollment elasticities with respect to these variables at their mean values were calculated. The results suggest that there is no significant difference between the responsiveness of male and female enrollment in terms of the explanatory variables except for the rate of return of higher education. Male enrollment is responsive to such market changes, while female enrollment appears to be independent of this variable. The elasticities with respect to tuition and family income suggest that parents in general do not discriminate between male and female children in terms of sending them to institutions of higher education. (G)

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January 1973. Washington, D.C.: Georgetown University Public Services Lab, 1973. (ERIC Document Reproduction Service No. ED 082 290)

National Assessment of Educational Progress is a survey of how much United States citizens know about and what they are capable of doing in ten broad subject areas. This pamphlet outlines the types of findings on educational achievement that might be made from the statistical data on knowledge, attitudes, and skills being gathered. Additionally, the report examines social indicators that could be developed from the data, explores the use of National Assessment data for the understanding of educational achievement, and considers how National Assessment might contribute to a measurement of the quality of life. (ERIC)

National Center for Education Statistics. The condition of education. Washington, D.C.: U.S. Printing Office, 1975-1980.

The Condition of Education, a statistical report describing conditions in education as well as conditions in the larger society that affect education, is the most prominent social indicators report in the field of education. The Condition of Education has been published annually in June since 1975 by the Division of Statistical Services in the National Center for Education Statistics under the editorial direction of Mary Golladay. The 1978 edition, e.g., contained 117 charts with accompanying tables in six content areas: the context for examining the condition of education; elementary and secondary education; postsecondary education; educational personnel; financing higher education; and youth education and labor force participation.

Olkinuora, E. On the problems of developing education indicators. Acta Sociologica, 1973, 16, 284-302.

This article examines the problems that can arise in the development of educational indicator systems. The work is based on a review of the social indicators literature and on the author's personal involvement in a project to develop educational indicators at the Institute for Educational Research, University of Jyvaskyla, Finland. The problems that are discussed concern (1) development of a frame of reference for indicator selection, (2) operationalization of variables, (3) construction of indicators, and (4) political considerations involved in the selection and use of particular indicators. A preliminary frame of reference is presented that integrates quantitative and qualitative educational inputs and outputs with (1) educational equality, (2) educational relevance from the societal perspective, (3) educational relevance from the individual's perspective, and (4) educational efficiency. Problems of operationalizing goals within this framework are illustrated, and the inadequacies of existing education-related data for addressing the suggested goals are enumerated. The implications of educational indicators for policymaking are discussed from both the "optimistic" view that indicators can provide educational information more concisely and the "pressimistic" view that indicators will not influence policymaking any more than other education-related data because policymakers rely largely on political considerations in formulating educational policy. (C)

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ance of educational systems. Washington, D.C.: OECD Publications Center, 1973.

This report is an outline of a system of indicators for evaluating the performance of educational systems and grew out of OECD work on social indicators. Existing statistical data on education consists of "inputs." The desire expressed in this study, however, is to measure "outputs," or actual system performance. Whenever a relationship exists between a statistical measure of education and a notion of welfare or well-being, it is called, for the purposes of this report, an indicator (i.e., it measures output or performance). After a short introductory chapter, the second chapter discusses approaches and methods toward the selection of goals and the evaluation and construction of indicators. Possible goal areas in education discussed in Chapters 3-7 are transmission of knowledge and skill, education and the economy, equality of educational opportunity, provisional educational services for individual requirements, and education and the quality of life. These chapters make precise statements about the different emphases that are possible inside a general area and, within those subareas, discuss possible indicators and the assumptions required for their construction. When a specific indicator emerges from the consideration of goals, the policy implications of its variation are discussed. (ERIC)

Organization for Economic Cooperation and Development. A framework for educational indicators to guide government decisions. Paris: Author, 1973.

Mainly dealing with proposals concerning indicators for measuring the impact of education on society, this report attempts to present a framework of educational statistics related to the main policy concerns of member countries. Indicators are assessments of the condition of society vis-a-vis its aspirations and goals. The report defines some of the more important general policy objectives and examines statistical measures that are most useful to monitor progress or regression within each area of concern. This approach admits that indicators of performance must be multidimensional so that education can meet its many objectives, including contributions to the transmission of knowledge, equality of opportunity and social mobility, meeting the needs of the economy, individual development, and transmission and evolution of values. Finally, the effective use of resources in pursuit of the policy objectives is discussed. (ERIC) NOTE: See also Jaeger, R.M. in: SOCIAL INDICATORS: METHODS

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FUTURES STUDIES: SOURCES

California State Department of Education. A brief annotated bibliography on (1) societal futures; (2) educational futures; (3) educational alternatives and change; (4) resources: societal and educational. Sacramento: Author, 1979.

Publications selected to provide educators with information about changing societal values, attitudes, technologies, jobs, lifestyles, and political structures, and about the implications of these changes vis-a-vis education and educational processes, are listed in this annotated bibliography. Part I lists and annotates 41 books representing a cross-section of views of societal futurists. Seventeen references on the field of educational futures are presented in Part II. Part III comments on 15 books on educational change that might offer implementation assistance at the school or district level. Part IV lists 13 organizations which can provide information about societal and educational futures. References which are of special interest to those beginning a study of the future are noted in each section. Also presented are lists of additional writers whose works may be of interest. (ERIC)

Cornish, E. The study of the future: An introduction to the art and science of understanding and shaping tomorrow's world. Washington, D.C.: World Future Society, 1977.

A general introduction to futurism and future studies. Chapters discuss the history of the futurist movement, ways to introduce future-oriented thinking into organizations, the philosophical assumptions underlying studies of the future, methods of forecasting, current thinking about what may happen as a result of the current revolutionary changes in human society, etc. The volume also includes detailed descriptions of the life and thinking of certain prominent futurists and an annotated guide to further reading. (WFS)

Fowles, J. (Ed.). Handbook of futures research. Westport, Ct.: Greenwood Press, 1978.

This handbook is an attempt to explain the aims and content of the relatively young field of futures research to a somewhat uninformed but interested audience. It contains 41 articles, authored or co-authored by leading futurists. The articles which are described as "representative of the matters discussed in the journals futurists read and the conferences they attend" reveal a considerable diversity in the approaches to futures research. They reflect the current troublespots in the field as well as its vitality.

The book is divided into 5 parts. Part I contains three articles about the growth of futures research while Part II gives an overview of the major difficulties of the field. Part III discusses the various procedures, the "how", of futures research. Specifically, it contains articles on the practice of intuition, the utility of science fiction, images of the future, scenarios, trend extrapolation, the Delphi technique, cross-impact analysis, simulation modeling, simulation gaming, technological forecasting, technology assessment, and social indicators and social forecasting. Part IV describes substantive areas for futures research, the "what", for instance, in the fields of population, food supply, energy, environment, urban development, communications, biomedical research, technology, politics, education, and space. Part V discusses future challenges for futures research.

Appendices on existing journals, periodic reports, graduate programs, and organizations in futures research supplement the overview. In addition, a brief glossary and notes on the contributors are provided.

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Johansen, R., & Samuel, P.A. Future societal developments and postsecondary education: A handbook for citizen organizations (Report R-38). Menlo Park: Institute for the Future, 1977. (ERIC Document Reproduction Service No. ED 144 421)

This handbook is addressed to organizations with goals related to post high school learning. Basic information is provided about future societal developments in the United States that should be taken into consideration in making organizational decisions. Some practical methods for long-range planning are also outlined. Four areas of societal change are considered: (1) demographics; (2) work; (3) political economy; and (4) "learning inventions." In exploring the four areas of change, the likely trends in each are plotted and some possible sources of discontinuity are examined. The authors' judgments about these societal developments and their implications for postsecondary education are included as notes to the text. (ERIC)

Marien, M. Societal directions and alternatives: A critical guide to the literature. LaFayette, N.Y.: Information for Policy Design, 1976.

A guide to the literature dealing with what various thinkers believe is happening in our society. This extensively annotated bibliography provides listings of books on a wide variety of topics, including: Optimists and Pessimists, Ecology and the Limits to Growth, World Order, Decentralization, Human Needs, Government Reform, Redistribution of Wealth and Power, etc. This is a fascinating volume to dip into. (WFS)

Marien, M. (Ed.). The hot list Delphi: An exploratory survey of essential reading for the future. Syracuse, N.Y.: Syracuse University, Educational Policy Research Center, 1972. (ERIC Document Reproduction Service No. ED 071 192)

This report lists 236 books and articles of which 192 have been rated by a panel of 14 qualified futurists. The findings of this survey are being made available to aid in the professionalization of the field of futures research; to encourage more and better surveys such as this one; and to provide a somewhat authoritative list of selected readings for policymakers, professionals, students, and concerned citizens who wish to further their understanding of futures, futurists, and futuristics. The documents are rated according to merit and reading audience. Futures documents are annotated and classified according to (1) general overviews; (2) general symposia and anthologies; (3) technology and its impacts; (4) population, resources and environment; (5) government and international relations; (6) business and economics; (7) the individual, the family, and youth; (8) communications and education; (9) futures "classics"; (10) utopias and science fiction; (11) methodology; and (12) bibliographies and directories. From these documents, 36 were selected as a recommended basic library for futurists. The review also includes information about how to acquire the documents surveyed. (ERIC)

Staman, E. A catalogue of planning in higher education: Organizations, periodicals, bibliography. Washington, D.C.: Society for College and University Planning, 1978.

This document is designed to be a catalogue of source information related to higher education planning and administration, with an emphasis on the tools required for planning personnel.

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World Future Society. The future: A guide to information sources (2nd ed.). Washington, D.C.: World Future Society, 1979.

This second edition of "The Future: A Guide to Information Sources" represents an extensive revision and includes considerably more information than the first edition published in 1977. This volume contains lists of individuals, organization, research projects, books and reports, periodicals, films, tapes, games and simulations, media presentations, and courses and programs offered by educational institutions. In addition, it offers a glossary of terms frequently found in writing about the future and several indices. It's an invaluable source of information for everyone involved in the study of the future(s).

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FUTURES STUDIES: GENERAL

Bell, D. The coming of post-industrial society: A venture in social forecasting. New York: Basic Books, 1973.

This book contains most of the concepts that sociologist Bell has developed in recent years. Scholarly and well-documented, it offers a thoughtful analysis of the great social trends that are shaping our future society. Bell argues that people can make meaningful forecasts about the future of modern society if they take the trouble to understand fully the present conditions of that society and the trends visibly at work in it. (WFS)

Boucher, W.I. (Ed.). The study of the future: An agenda for research. Washington, D.C.: National Science Foundation, 1978. (ERIC Document Reproduction Service No. ED 148 318)

This collection of 18 papers is concerned with the beliefs, methods, practices, and results associated with the type of forecasting which has become known in the last 10 to 15 years as "futures research". Topics discussed include: (1) forecasting methodology; (2) the validity of forecasting systems; (3) unforeseen developments; (4) forecasting in political science, sociology, technology, and economics; (5) normative forecasting; (6) forecasting for decisionmaking and policymaking; (7) professional issues in forecasting research; and (8) the future of futures research. Results of a survey of current forecasting efforts and a bibliography are appended. (ERIC)

Clarke, A.C. Profiles of the future: An inquiry into the limits of the possible (Rev. ed.). New York: Harper and Row, 1973.

This is a new edition of one of the classics of futurist literature. The book was originally published in 1963 and some of the things that Clarke spoke of have already come true. The first two chapters explore the question of why prophets in the past often failed to foresee the future. Clarke attributes this to (1) a failure of nerve and (2) a failure of imagination. In the one case, the would-be prophet has all the facts but cannot see that they point to an inescapable conclusion. In the other case, the prophet does not have the facts and can't imagine them. Later chapters explore such topics as transport, ground-effect machines, ocean mining, space, etc. This exceptionally well-written and scientifically balanced book presents the author's imaginative forecasts for the next 150 years. Clarke maintains that it is impossible to predict the actual future in any detail but one can delineate the general direction that development might take and indicate the realistic possibilities. (WFS)

Cole, S., Gershuny, J., & Miles, I. Scenarios of world development. Futures, 1978, 10 (February), 3-20.

This article looks at 16 recent studies of global futures and examines their conclusions within a sociopolitical framework. Three idealised worldviews--conservative, reformist, radical--are constructed from this framework; they are then married with a classification based upon the two parameters of high growth-low growth and equality-inequality. This allows for the concise mapping of existing scenarios and, by the elucidation of the major differences in sociopolitical forecasts, provides a simple but effective technique for comparative analysis. Two quality-of-life issues, the future of work, and of political development and change, are used as concrete examples of how the method can be used to create a series of scenarios which cover the whole socio-political spectrum of alternative futures. (AUTHOR)

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Cornish, E. 1999: The World of tomorrow. Washington, D.C.: The World Future Society, 1978.

This anthology of articles from THE FUTURIST is divided into four sections: "The Future as History," "The Future as Progress," "The Future as Challenge," and "The Future as Invention." The subjects covered included economic visions, architecture, medicine, space colonies, energy, education, sex, work, appropriate technology, the automated office, and social inventions. (WFS)

Drucker, P.F. The age of discontinuity: Guidelines to our changing society. New York: Harper and Row, 1969.

Economist Drucker describes four areas of significant discontinuity: (1) new technologies--not embroiderments on old ones, but entirely new ones--which will bring about new industries and render some existing ones obsolete; (2) the world economy, which is becoming a single market, one "global shopping center"; (3) highly organized power concentrations to which all our social tasks have been entrusted, but concerning which there is increasing disillusionment; and (4) the centrality of knowledge, which Drucker views as the most important of the four discontinuities. "Knowledge during the last decades," Drucker says, "has become the central capital, the cost center, the crucial resource of the economy. This changes labor forces and work, teaching and learning, the meaning of knowledge and its politics." Drucker anticipates an upcoming period of change in the world economy with four new industries becoming major forces: those based on information, oceans, materials, and the megalopolis. Drucker forecasts that the knowledge industry will account for one-half of the total national product in the late 1970s. (WFS)

Ferkiss, V.C. Futurology: Promises, performances, prospects. Beverly Hills, California: Sage Publications, 1977.

One of the "Washington papers written for the Center for Strategic and International Studies, Georgetown University, this book presents a survey of the art and science of predicting the future. (WFS)

Harman, W.W. The coming transformation. Futurist, 1977, 11(1), 4-11.

The industrial nations face mounting crises due, ironically, to their success in solving earlier problems. The solution to the current crises may lie in a basic transformation of the societies themselves. Social forces which might bring about such a transformation arise both from the nature of the fundamental dilemmas now faced by the industrialized world, and a resurging sense of transcendental values and goals. Research on alternative futures carried out during the years 1967 to 1977 at Stanford Research Institute is summarized. Most scenarios for the future tend to lie in 1 of 2 groups. One group sees a future of gradual change, evolving along the lines of the modernization trend of many past centuries. The 2nd group sees the likelihood of an inflection in this trend: industrial society, faced with a set of dilemmas rooted intrinsically in the industrial paradigm, will transform itself into a significantly different "transindustrial" society, probably with a wrenching and traumatic transition period. (SOCIOL AB)

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Hirschhorn, L. Post-industrial life: A US perspective. Futures, 1979, 11 (August), 287-298.

This article discusses the observation that adulthood is no longer the relatively static plateau of personal development. Increasing freedom of choice between life and work, and within work itself, produces greater responsibilities and an increase in psychological stress. The family, the school, and various other social institutions are losing their rigid control over an individual's life course. Developmental adulthood is now emerging, as the categories of youth and adolescence emerged in the 19th century. If changes in the fields of culture, work, and social scheduling are out of step, problems of marriage breakdown, decreased economic growth, or personal aimlessness will result. The author suggest that even if the changes are in harmony, a time-sensitive social policy will be necessary to bridge the growing gap between individual decisions and aggregate flows of people, resources, and jobs. (AUTHOR)

Holroyd, P. Change and discontinuity: Forecasting for the 1980s. Futures, 1978, 10 (February), 31-43.

This outline of forecasting takes a very broad view--covering many of the diverse approaches now available--so that attention can be paid to the role of forecasting in discovering and analysing alternatives, as well as to its established role in prediction. The philosophy of forecasting and the differing methodological approaches are discussed, highlighting particularly the problem of continuity and discontinuity in change, and the concepts of the cultural barrier and the paradigm shift. The author, applying the idea of discontinuity in social change (the paradigm shift), examines some possibilities for the 1980s. He argues that in the field of social forecasting, which is now becoming an important element in all other types of forecasting, the forecaster's capability to foresee broad changes in values is crucial, since such changes will themselves lead to further developments throughout society. Forecasting is now reaching the stage where its methods and philosophy allow us to assess potential hazards, and to preact, rather than react, to them. (AUTHOR)

Jantsch, E. Technological planning and social futures. New York: Wiley and Sons, 1972.

This book consists mainly of articles which the author has published since his survey of methods and organization of technological forecasting in 1967. It reflects his growing concern with the framework of thought and action in which forecasting techniques are employed.

After developing a general framework for long-range thinking, its application to the development of technology and its translation into terms of corporate planning, Jantsch gives a brief survey of some of the principal categories and methodological concepts of technological forecasting. He, then, deals with the basic shift from product-oriented to function-oriented thinking which accompanies the introduction of strategic long-range planning and discusses its organizational implications. In his final chapters, he turns his attention to the roles and responsibilities of corporations and outlines changes which will be introduced to scientific and technological activity in general, and the University, in particular, if science and technology are to be marshalled for a long-range purpose of mankind.

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Books, 1967.

Originally published in France in 1964, this book has become one of the classics of futurist literature. De Jouvenel, widely known as an economist and philosopher, regards looking into the future as an art rather than a science. After laying the philosophical groundwork for the new emerging field, he urges the creation of a "forecasting forum" to develop the art for government, industry, and people at large. (WFS)

Kahn, H., Brown, W., & Martel, L. The next 200 years: A scenario for America and the world. New York: William Morrow and Co., 1976.

Kahn and his Hudson Institute colleagues present a highly optimistic view of America's future. They express confidence that Americans will become increasingly wealthy and that the problems associated with shrinking supplies of fossil fuels and increasing pollution can be overcome. This book might well be read in conjunction with the more pessimistic Awakening from the Dream by Rufus E. Miles, Jr. (WFS)

Linstone, H.A., & Simmonds, W.H.C. (Eds.). Futures research: New directions. Reading, Mass.: Addison-Wesley, 1977.

The theme which underlies the 25 articles of this book is the contention that futures research, as well as research in general, "must move beyond the objective, analytic, reductionist, number-oriented, optimizing, and fail-safe ways." It must "learn to think with equal fluency in more subjective, synthesizing, holistic, qualitative, option-increasing, and safe-fail ways." The heart of the matter is the perceptual change in the research worker him/herself. Foremost, futures research is the formulation of the questions.

The three major parts of the book deal with the shifting foundations in research in general and futures studies in particular, issues and difficulties in managing complexity, and critical questions in regard to currently used methodologies. In addition, a number of recent projects in futures research are described.

One of these projects, "The Problem of Critical Problem Selection" by Teige, P. et al., provides the reader with a list and brief description of 41 future national and international problems. This list is seen by the editors of this book as a crude guage to "determine the gulf between the state of the art and the desiderata in futures research."

Biographical data of the editors and contributors supplement the book.

Loye, D. The knowable future: A psychology of forecasting and prophecy. New York: John Wiley and Sons, 1978.

One of the main purposes of this book is to examine the science lying behind futures prediction as a form of venture as well as an informal mass activity. The author presents a case for viewing the task of futures forecasting as a central problem to all science that could be used to revitalize social science and provide for a shift in paradigm.

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In Part I, Loye provides the reader with a common body of basic information about forecasting and a futures-relevant psychology. In Part 2, he moves on to applications, the "how to" aspects of forecasting. He describes the research and development of his Ideological Matrix Prediction (IMP) and pays special attention to the use of right as well as left brain operations in futures prediction.

Michael, N. On learning to plan--and planning to learn. San Francisco: Jossey-Bass, 1973.

Though most people agree there is need for long-range social planning, almost no such planning is underway. The author, a social psychologist, explains the various resistances in individuals and groups that must be overcome in order to have long-range social planning. (C)

Miles, E., Jr. Awakening from the American dream -- The social and political limits to growth. New York: Universe Books, 1976.

Formerly a top career official of the U.S. Department of Health, Education, and Welfare and later President of the Population Reference Bureau, Rufus Miles currently is senior fellow and lecturer at the Woodrow Wilson School of Public and International Affairs at Princeton University. In this book he analyzes 22 determinants that have brought American society to its present state. He believes that American society is highly vulnerable to further social deterioration, sabotage, and breakdown. This highly pessimistic work may be contrasted with Herman Kahn's highly optimistic volume, The Next 200 Years. (C)

Perloff, H. (Ed.). The future of the U.S. Government: Toward the year 2000. New York: George Braziller, 1971.

This is a report of a task force of the Commission on the Year 2000 of the American Academy of Arts and Sciences. The book includes 19 essays plus panel discussions. The book's editor is Dean of the School of Architecture and Urban Planning at the University of California at Los Angeles.
Perloff says that the activities of the task force centered on two themes: (1) the most significant problems and critical issues that the government of the United States will have to face, and (2) the institutional changes and processes needed to enable the government to cope effectively with these changes. (C)

Schwarz, S. (Ed.). Knowledge and concepts in futures studies. Boulder: Westview Press, 1976.

This book contains 12 essays, written by Swedish scientists, which discuss the question of the role of futures studies in decision-making and long-range planning. The authors address methodological problems in future studies as well as conceptual and analytical issues.

Spekke, A.A. (Ed.). The next 25 years: Crisis and opportunity. Washington, D.C.: The World Future Society, 1975.

This volume is a selection of 47 thought-provoking papers submitted to the World Future Society's Second General Assembly, June 1975. The meeting was the largest gathering of futurists ever held (approximately 2,800 attendees). The papers were selected for their general interest and relevance to the theme of the meeting--a look at the prospects for mankind during the final quarter of the 20th century. (WFS)

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Theobald, R. An alternative future for America's third century. Chicago: Swallow Press, 1976.

Ranging over many themes, socio-economist Theobald attempts to explore the problems mankind faces, the possibilities for deep change presented by these problems, and how people can hope to bring about the revolution in values, institutions, and systems needed to avoid extinction. He covers such themes as communications, the environment, education, the theory of guaranteed income, and income distribution. (C)

Weaver, R.A. Whither goest futur-(es), -(ism), -(ology), -(istics) in education? Educational Research Quarterly, 1977, 1(4), 5-12.

Futures research is defined as the development and use of forecasting techniques: (1) for estimating the likelihood of an event's occurence over time; (2) for examining the probability of one event's occurence affecting the likelihood of another even'ts occurence; and, (3) for analyzing the relationships among forecasted alternatives. (ERIC)

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FUTURES STUDIES: METHODS

Allen, T.H. Cross-impact analysis: A technique for managing interdisciplinary research. Journal of the Society of Research Administrators, 1978, 10(1), 11-18.

Cross-impact analysis can be used to deal with the conceptual and communication obstacles found in complex research efforts such as attempting to organize large amounts of data connected with larger research efforts and attempting to plot the numerous cause and effect stimuli. Cross-impact analysis is a method that can be used to reveal and examine interactions among future events. It reveals the conditional probabilities of forecasted events in a set and identifies the potential interactions among the events in the set. Cross-impact analysis presents events and their associated probabilities in a matrix form which makes judgments more explicit. Cross-impacts or interactions between events often suggest new causal and correlational linkages never noticed before. The method can also be used to test policies. References. (INFO)

Alter, S. The evaluation of generic cross-impact models. Futures, 1979, 11 (April), 132-150.

The first cross-impact models were developed ten years ago. Since then, many versions of this technique have been developed. This article proposes criteria for evaluating generic cross-impact models and demonstrates the use of these criteria. It distinguishes carefully between generic cross-impact models and application models. Generic models consist of mathematical definitions and computational procedures; application models consist of a generic model plus appropriately expressed data relevant to the topic being analysed. Four criteria are proposed for evaluating generic cross-impact models: internal consistency, robustness, generality, and clarity. (AUTHOR)

Amara, R.C. A note on cross-impact analysis: A calculus for sequence-dependent events. Futures, 1972, 4 (September), 267-271.

Commonly, cross-impact analyses employ methods which use the notions and assumptions of conditional probabilities. Accordingly, effects dependent on time sequence of events are usually not considered. Since the time sequence or order of events or developments is often overriding in determining absolute, conditional, and joint probabilities, a need exists to define and develop a suitable calculus for describing such interactions. Such is the purpose of this article.

Armstrong, J.S. Long-range forecasting: From crystal ball to computer. New York: J. Wiley & Sons, 1978.

This is a book about long-range forecasting methods written for people who have done or are doing forecasting in business, government, academic, or consulting. It is written in a clear and jargon-free language, well structured, and filled with practical examples from all areas of the social, behavioral and management sciences.

The book is divided into five parts. Part I, "Getting Started", describes how to implement different methods of long-range forecasting, discusses the systems approach and its relevance to long-range forecasting, and outlines some general research strategies. Part II, "Forecasting Methods", examines methods one might use in long-range forecasting. Consideration is given to the most

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effective way to use judgmental, extrapolation, econometric, and segmentation methods, as well as to combinations of these methods. The use of amalgamated forecasts is also examined. Part III, "Evaluating Models", discusses how to evaluate forecasting models. This includes how to analyze inputs to a model, as well as how to analyze the outputs from it. Part IV, "Comparing Methods", examines the relative advantages of each of the forecasting methods. Evidence is presented to identify which methods are best in which situation. A guide is constructed for the selection of the methods most appropriate for a specific problem. Part V, "Commencement", discusses what forecasting methods will prove to be more popular and more useful in the future. It also suggests areas where further research on forecasting methods will be most valuable.

Armstrong's book can also be used as a guide and reference to forecasting methods. An extensive bibliography with explanations and ratings, a list of references with "promising titles that should be of interest to readers of long-range forecasting", a glossary, and a number of appendices are provided for this purpose.

Eden, C. Modelling the influence of decision makers on the future. Futures, 1977, 9(4), 272-284.

Attempts to use futures research in a specific framework are described: the development of a model to be used as a basis for action within a UK local authority. The model is designed to explore the ramifications of the decision-making activities of real people within a specific organization. It represents an original attempt to include explicitly the acts of human endeavor which influence the direction of the future within a model for indicating possible futures. The current state of the model-building activity which is intended to depict the policy-making process is described. The model is based upon concepts drawn from cognitive psychology & sociology. The model meets its primary objective in organizational design and can be utilized as a tool for policy making. 5 Figures. (SOCIOL AB)

Enzer, S. INTERAX - An interactive model for studying future business environments (Monograph 35). Los Angeles: USC, Center for Futures Research, 1979.

The extended planning horizon together with the rapid pace of change have made the topic of developing environmental (contextual) scenarios for strategic purposes extremely difficult and time-consuming. For this reason, the Center for Futures Research developed a forecasting procedure, INTERAX, which contains data needed to analyze a wide range of strategic issues in a computer model that is ready for immediate use in analyzing issues as they arise. This paper briefly describes the rationale, data, and alternative ways in which INTERAX can be used.

Enzer, S. Interactive cross-impact modeling (Monograph 27). Los Angeles: USC, Center for Futures Research, 1976.

This report covers the status of the methodological research through the second year of the 20 Year Forecast Project of the Center for Futures Research. The method described in this paper is based on the assumption that the future cannot be "predicted" or "pre-told", since it contains many uncertainties and is affected by societal actions which basically defy scientific analysis. The author, therefore, suggests that an approach to developing greater insight into

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alternative future scenarios has to be in the domain of a structured art form, not a scientific process. The interactive cross-impact modeling approach is discussed with its emphasis on policy analysis and accounting.

Enzer, S.,& Alter, S. Cross-impact analysis and classical probability: The question of consistency. Futures, 1978, 10 (June), 227-239.

A great deal of confusion has surrounded the basic definitions and concepts in the various versions of cross-impact analysis. The purpose of this article is to clarify the meaning of one of the fundamental concepts--conditional probability--as used in a cross-impact analysis. The authors begin by illustrating two versions of conditional probability, one based on correlation and one based on causation, and show that the latter is much better suited to the study of alternative futures. One of the main sources of past misunderstanding is the attempt to apply the correlative conditions of Bayes' theorem to a causative cross-impact analysis. They demonstrate that there is no inconsistency between Bayes' theorem and cross-impact analysis; the confusion results from the use of Bayes' theorem when the basic analysis involves causation. (AUTHOR)

Ewing, R.P. The uses of futurist techniques in issues management. Public Relations Quarterly, 1979, 24(4), 15-18.

Issues management arose from the recognition by corporations that they take account of and participate in, when appropriate, the public policy process. Moreover, public pplicy can be defined as the main mechanism for the social control of business. Futures research is also referred to as social forecasting. Futures research is an older concept than issues management and its tools and methods are now being incorporated into issues management procedures. Today, futurists come from all disciplines, occupations and avocational fields. Although over 150 forecasting techniques have been developed, only about 12 are widely used. These include: (1) trend extrapolation, (2) trend impact analysis (TIA), (3) scanning, (4) monitoring, (5) the Delphi technique, (6) cross-impact analysis, (7) computer simulations, (8) scenario writing, and (9) technology assessment. Congress established its office of technology assessment in 1974, and it has been active in developing reports to aid legislators to evaluate the impact of new technology. Among other techniques used in futures research, one new approach being developed is called ideological matrix prediction (IMP). references. (INFO)

Fowles, J. The problem of values in futures research. Futures, 1977, 9(4), 303-314.

Future research results in one contemporary set of values being elevated above others, then imposed upon the future. The imposition comes in the form of plans, which are certain not to harmonize perfectly with future values, as values fluctuate in time. A three-point approach is proposed for reducing the discrepancy between futurist values, expressed in plans, and the values found among the eventual subjects of plans. The three steps include: (1) hazarding guesses about future values, (2) considering altering future values, and (3) creating flexible plans. A combination of the three is necessary for dealing with the discrepancy between present plans and future values. (SOCIOL AB)

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Woodlock, J. An overview of social forecasting procedures. Journal of American Institute of Planners, 1976, 42(3), 253-263.

Extrapolation from trend measurements is the most common of systematic methods for forecasting the future or large-scale social systems. The search for a firmer conceptual basis of extrapolation has taken two forms - (1) certain psychological elements held in common by the members of a social system presage subsequent sociocultural realities. The factors included are images of the future, values, aspirations, and motives; (2) the second approach is to project forward an understanding of the social system itself. In the field of futures research, this has resulted in such techniques as the Delphi method, scenario writing, simulation modeling, and cross-impact analysis. (INFO)

Godet, M. The crisis in forecasting and the emergence of the "prospective" approach. Oxford: Pergamon, 1979.

This is an introduction to the development of scenarios. Godet spends considerable time explaining the limitations of traditional or, to use his terminology, classical forecasting methods. Godet then proceeds to describe in detail a method of scenario development which he has used in a variety of applications in France. The last two chapters of the book provide specific examples of the use of the method. (C)

Helmer, O. Problems in futures research, Delphi and causal cross-impact analysis. Futures, 1977, 9(1), 17-31.

Futures analysis deals with areas for which no definite natural laws exist. In these conditions, reliance on the opinions of experts becomes necessary. The Delphi technique, as defined by N. Dalkey and O. Helmer ("An Experimental Application of the Delphi Method to the Use of Experts," Management Science, 1963, 9), offers a means by which opinions within an expert group can be exchanged. This approach deals with events one at a time. An extended method, cross-causal impact analysis, in which the impact of an event or condition in one time period on other events or conditions in later time periods is estimated, allows the formation of models of processes. An example of this technique is presented. It offers the possibility of confronting estimators with explicit implications of their estimates which can improve the consistency of these estimates. Once a model so formulated has reached a stage at which it is considered fairly realistic, it can be used for planning purposes. The presented model still has many imperfections, but it offers a possible advance on current technologies. 1 Figure, 8 Tables, Appendix. (SOCIOL AB)

Linstone, H.A., & Turoff, M. (Eds.). The Delphi Method: Techniques and applications. Reading, Mass.: Addison-Wesley, 1975.

This book is a collection of articles which were written during the first half of the seventies on a diversity of applications of the Delphi Method. The editors deliberately selected contributions which relfect the vast differences in the use of the method in order to show that "in its design and use Delphi is more of an art than a science." All but four of the articles were esepcially prepared for this book.

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In their introductory chapter, the editors give a brief account of the evolution of the Delphi Method, its characteristics, and the reasons for its use, successes and failures. Chapters II and III consist of articles which provide an overview of the method, its utility, the underlying philosophy, and broad classes of applications. Questions of precision and accuracy of Delphi are considered in chapter IV. Chapters V and VI describe some of the specialized techniques that have evolved for asking questions and evaluating responses, foremost among them the cross-impact analysis. The effect computers can have on Delphi and speculations on the future of the technique itself are discussed in Chapter VII. The book concludes with a summary of pitfalls which can serve the practioner as a continuing checklist (Chapter VIII).

In addition to the references associated with each of the articles in the book, Linstone & Turoff provide the reader with a comprehensive bibliography which is broken down into a number of separate sections for the purpose of greater utility to the user. Biographical data of the editors and contributors are also included.

Lipinski, H., & Tydeman, J. Cross-impact analysis: Extended KSIM. Futures, 1979, 11 (April), 151-154.

The authors present an extension of Kane's[(1)] cross-impact simulation model (KSIM) that allows the inclusion of events and trends, and discuss the basic issues of forecasting and compatibility of forecasts.

[(1)] Kane, J. A primer for a new cross-impact language - KSIM. Technological Forecasting and Social Change, 1972, 4, 129-142.

Lowenhar, J.P., & Stanton, J.L. Computer time sharing: 180 time series analysis techniques combined form an effective, understandable forecasting tool. Marketing News, 1975, 8(22), p. 6.

The service-bureau company has combined all of the existing time-series-analysis forecasting techniques into one package on its management time-sharing system. Marketing executives report that with it they can accurately plan sales quotas, control costs, and monitor many segments of the marketing plan they previously could not measure. The 180 unified techniques eliminate the theoretical 'guessing' previously relied on. For the marketer, TSA can help augment decisions with respect to market monitoring, promotional plans, and product-market potential, for long-run and short-run decision-making. TSA is relatively inexpensive, related to the out-of-pocket costs generated and to the cost of the manager's time. Since the manager has % hands on < when using TSA with time-sharing, he does not require the interface between data-processing and his department. Some time-sharing companies provide extensive education and non-technical literature assistance in the forecasting area. (INFO)

Martino, J.P. Technological forecasting for decision-making. New York: Elsevier, 1972.

A comprehensive, authoritative treatise on the methodology of technological forecasting and its application to social, business, and government decision-making. (WFS)

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Mitchell, R.B., Tydeman, J., & Curnow, R. Scenario generations: Limitations and developments in cross-impact analysis. Futures, 1977, 9(3), 205-215.

Informed subjective judgment has a place in decision making, and cross-impact analysis may be useful in providing this information. Focus here is on the art of scenario generation, review of several existing procedures, and their limitations. The information needs of decision makers are discussed and three alternative approaches are outlined and compared in terms of their relative efficiency. In that decisions are being made and resources are being allocated in an increasingly uncertain world, scenarios offer the decision maker a context within which to evaluate proposals. 5 Tables. (SOCIOL AB)

Sarin, R.K. A sequential approach to cross-impact analysis. Futures (UK), 1978, 1(1), 53-62.

A knowledge of the likelihoods of future scenarios is needed for planning in industry and government. The approach in this presentation employs the knowledge and the experience of "experts" in the form of subjective probabilities to determine the likelihood of events. The necessary and sufficient conditions that the elicited information from the experts must satisfy in order to compute the likelihood of the scenarios consistently are derived. A sequential procedure is developed that utilizes this information in generating the probabilities of the scenarios. Approximation schemes and sensitivity analysis are recommended to implement the approach with less time, effort, and cost. This procedure has several advantages over a direct-assessment approach. Tables. Equations. References. (INFO)

Welch, H. Jr., & Watson, S.E. Techniques of future research. New Directions for Student Services, 1979, 1(6), 1-16.

Faced with the challenges of a dynamic future, the concerned student affairs professional should be aware of some of the more promising methodologies for future forecasting. The future-responsive administrator may wish to incorporate these tools into a pro-active approach to student services. (ERIC)

Werbos, P.J., & Titus, J. An empirical test of new forecasting methods derived from a theory of intelligence: The prediction of conflict in Latin America. Transactions on Systems, Man, and Cybernetics, 1978, 8(9), 659-666.

Describes the "compromise" method, a new computer-based forecasting tool that, like regression (least squares) or new forms of Box-Jenkins methods, estimates the parameters of a multivariate dynamic model and may be used for causal analysis or policy impact analysis. (PSYCH AB)

Zentner, R. War games for the board room. Planning Review, 1980, 8(1), 25-30.

One of the main objectives of a planning scenario is to provide decision-making alternatives, while a second objective is to impress upon the user the uncertainty of the future. Businesses began using scenarios in the development of corporate plans, some of which are public. Development of a scenario begins with variable selection and the setting of premises; the scenario writer then must make a distinction between trends and events which are to affect the scenario. Two main methods for developing scenarios are available: (1) hard methods, involving mathematics, models and computers, and (2) soft methods, which are intuitive, more qualitative, and involve individual and personal

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choices. A typical hard method is cross-impact analysis, which offers an orderly examination of interaction between several events, using a matrix method to systematically examine combinations. The computer model must be used with caution. There are many intuitive scenario methods, one of the most basic being expert opinion. Hard and soft methods are essentially complementary. Charts. (INFO)

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FUTURES STUDIES: EDUCATION

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Allain, V.A. Futuristics and education. Bloomington: Phi Delta Kappa Educational Foundation, 1979. (ERIC Document Reproduction Service No. ED 178 398)

Educators can help people adjust to rapid and continual social change by borrowing techniques developed in the field of futuristics. Specifically, educators can encourage people to think about and react to projected changes. Futuristics (the field of study concerned with systematic study of the future using a wide range of disciplines) is based on the assumption that decisions made now will shape the future. Aspects of futures research that differ significantly from other types of research include that futures planning is action oriented, designed to suggest multiple alternative courses of action, dedicated to anticipating and planning genuinely different concepts of the future, heavily dependent on the rational study of anticipated developments and their consequences, and concerned with creating a probabilistic environment. In addition, the concept of alternative rather than inevitable futures is fundamental to futuristics. Futurists attempt to determine possible alternative futures by considering factors such as history, chance, policy decisions, scenarios of the future, and projections based on group as well as individual opinions. Educators can incorporate futuristics into the curriculum in a variety of ways, including career awareness activities with a future orientation (elementary school), review of utopian literature and library research (secondary school), and interdisciplinary courses on the future stressing forecasting techniques, public policy, technology and educational futuristics (college level). (ERIC)

van Avery, D. et al. Futuristics and education: An ASCD Task Force report (Professional Paper, 1979-1). Alexandria: ASCD, 1979.

Educational needs for the future are discussed, particularly in light of how members of the Association for Supervision and Curriculum Development (ASCD) can help students prepare for the future. The document is presented in six chapters. Chapter I presents an overview of ASCD's long range school and educational plans. Chapter II defines key concepts in the field of future studies including alternatives, purposeful action, holism, extended time frames, interdependence, and perceptions of the universe by individuals. World problems examined in light of these concepts include ecological collapse, rising world population, scarcity of fuel and fresh water, and increasing oil prices. Chapter III focuses on educational implications of alternative futures. Topics discussed include identifying high priority issues, redefining knowledge, refocusing curriculum and objectives, and helping create preferable futures. Chapter IV explains how ASCD members can facilitate a futures orientation for students by joining the World Future Society, reading about the future, and participating in futures studies workshops. Chapter V considers how ASCD members can facilitate collaboration in the area of future studies with businesses, industries, schools, and social agencies. The final chapter offers a brief summary of the report. The document concludes with a directory of individuals and organizations involved in the futurist movement. (ERIC)

Botkin, J.W., Elmandjara, M., & Malitza, M. No limits to learning: Bridging the human gap (a report to the Club of Rome). Elmsford: Pergamon Press, 1979.

This latest report to the Club of Rome emphasizes that the human being with his/her largely untapped potential for learning lies at the center of any solution of the current world "problematique". It advocates innovative-anticipatory-participatory learning as opposed to the almost exclusively preferred

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"maintenance-learning" which primarily reacts to already existing crises. The bridging of the "human gap", i.e., the difference between growing complexity and problems today and our capacity to cope with it, must be furthered by all means to advance both survival and human dignity.

Bowman, J., Kierstead, F., Dede, C., & Pulliam, J. The far side of the future: Social problems and educational reconstruction. Washington, D.C.: The World Future Society, 1979.

A forceful, innovative proposal for the reconstruction of society through education. The authors outline a comprehensive model for transcending traditional education and emphasize the evolutionary changes that will help facilitate living and learning alternatives. (WFS)

Bright, R. A brief introduction to technology forecasting concepts and exercises. Austin, Texas: The Pemaquid Press, 1972.

James Bright is Professor of Technology Management at the University of Texas's Graduate School of Business Administration and President of the Industrial Management Center in Hilton Head, South Carolina. Since 1967 he has organized a series of seminars on technology forecasting and assessment. An integral part of Bright's seminars is the workshop in which students execute exercises based on case histories. Some of the most useful exercises are reproduced in this volume. Each group of exercises is preceded by a brief explanation of how forecasting techniques should be applied to the exercise, and in the process Bright offers some very clear explanations of the forecasting techniques now in use. (WFS)

Carey, M.L. Revised occupational projections to 1985. Monthly Labor Review, 1976, 99(11), 10-22.

A detailed description of revised occupational projections to 1985 is presented. Most long term trends in the employment of white collar, blue collar, and service workers and farm workers are expected to continue through the mid-1980's, but important changes will occur in the mix. As total employment grows by 20 percent, the number of jobs for white collar and service workers is projected to rise 28 percent. Blue collar jobs will increase by 13 percent. Technological changes will cause employment to increase in some occupations, with the computer industry being an excellent example. Health field occupations will grow, while the education field will grow more slowly and railroad jobs will decline. Forecasts indicate a potential supply greater than potential demand for college graduates. Jobs calling for workers with less than a high school education will be scarcer. Graphs. Tables. Footnotes. (INFO)

Danielsen, A.L. Subjective expected rates of return to education. Mississippi Valley Journal of Business and Economics, 1972, 7(3), p. 11.

The economics of education can be classified into at least 4 distinct categories or approaches. (1) rate of return; (2) human capital stock; (3) forecasting manpower; and (4) financial resources for education. The rate-of-return, or R approach is by far the most highly developed from a theoretical point of view, and the decision criteria are clear. Nevertheless, one important subrealm of the R approach has been neglected. The purpose of this paper is to distinguish actually attained from subjectively estimated rates of return to schooling and to present empirical estimates of the latter based on a sample of 129 college students. (INFO)

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Eide, K. Symposium on future programmes of information and communication in educational policy and planning: Synthesis report. Paris: UNESCO, 1978.

Educational researchers, planners, and policy makers from both developed and developing nations met to present papers on and discuss the topics of information and communication in educational policy and planning. This symposium report, one of a series of UNESCO reports, summarizes their papers and discussions. There are four main topics. The first topic is the problems encountered by the educational policy-makers and planners in obtaining and utilizing information. Most countries have a need for wider participation in educational decision making. Conventional forms of international dissemination of educational information are not meeting this need for they tend to reach only a small elite at the national level. A second topic discussed was ways and means to select and disseminate relevant information. Participants from Japan, the Soviet Union, and the Netherlands described their educational information systems. By contrast, another participant talked about the difficulties of an African country such as Ghana in obtaining valid information about conditions relevant to education. The third topic discussed was the international exchange of information. One idea that was appealing to several participants was that of regional networks. The last topic discussed by the symposium is Unesco's role in the diffusion and utilization of relevant information. Training of personnel was one recommendation.

Eldredge, W.H. University education in futures studies. The Futurist, 1975, 9(2), 98-102.

The number of future-oriented courses in universities has increased substantially, a Dartmouth sociologist finds in a worldwide survey, but many academics are disavowing the futurist label. The most recent survey yields conclusions that include the following - future studies courses have grown steadily. The most significant developments in future studies appear under other names. Some 80 policy studies and 40 peace studies programs appear in college catalogs. Methodological developments in forecasting, systems theory and analysis, modeling, and gaming are used to probe the future and have seemingly been more productive than those labeled futurism. European universities generally have not welcomed futures studies as teachable material. Future studies have a poor intellectual image. Perhaps futurists and their publicists have promised more than they can deliver. (INFO)

Enzer, S. Beyond bounded solutions. Educational Research Quarterly, 1977, 1(4), 22-33.

Futures research offers new tools for forecasting and for designing alternative intervention strategies. Interactive cross-impact modeling is presented as a useful method for identifying future events. (ERIC)

Good, M.L. The scientific world in the '80s. Public Relations Journal, 1979, 35(1), 22-28.

Regardless of the education of the population, many recognize that problems in the U.S. are quite complicated and that their solution cannot be ascertained easily. The U.S. has begun to realize that such difficult questions as environmental control and industrial production must extend into the 1980s and will have a profound effect on academic and scientific establishments in this country.

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During the 1980s, college enrollment is expected to decrease due to the lower birth rate of the 1960s, which means that institutions must continue present programs and create new ones under static budget conditions. Research programs will be centered around short-term, relevant research rather than long-range projects. Opportunities for bright, creative students will lessen which will deprive the U.S. of the creative leaders that are needed. The 1980s will probably require a return to basic concepts in order to produce another enlightened age. (INFO)

Hencley, S.P., & Yates, J.R. (Eds.). Futurism in education: Methodologies. Berkeley: McCutchan, 1974.

This book is an expression of the trend toward a more systematic study of the future of education and its environments. It originated in the federally supported General Special Education Administration Consortium (GSEAC) under the sponsorship of the University Council for Educational Administration (UCEA).

The book concentrates on the methods for studying educational futures. The 14 methods and related topics were chosen from more than 100 approaches to futures research and are judged to have significance not only for the study of the future but also, and particularly, for the attainment of desirable adaptations in educational institutions.

The methods described are varied and wide ranging. Some are quantitative while others are qualitative; some have already been employed in education while others have not; some enable researchers to exercise intuitive thinking while others are constrained by rigorously defined methods. There is an underlying assumption that only multiple sets of complementary techniques, rather than a single one, can make useful forecasts.

Specifically, the articles discuss contextual mapping, force analysis, relevance trees, the Delphi technique, cross impact matrices, a planning guide called Ariole, scenarios, decision matrix techniques, morphological analysis, technology assessment in education, educational trend analysis, Bayesian statistics, the Markov Chain theory and technological forecasting, and the Monte Carlo techniques in forecasting. A number of appendices on statistical procedures related to the various methods as well as a glossary supplement the overview.

Jantsch, E. Education for design. Futures, 1972, 4 (September), 232-255.

The notion of design adopted in this paper embraces the design of all human systems. The design tasks envisaged focus on processes rather than structures. They are viewed in the light of multi-level and multi-goal systems representation based on total human experience and aiming at coordination rather than control from the top. Education for design should focus primarily on the design of human relations, instrumentalities and institutions, along with their respective role patterns. The nature of learning at these three steps is seen as the cybernetic evolution of measure, norms and values respectively. (AUTHOR)

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tion. Washington, D.C.: Association of American Colleges, 1979. (ERIC document Reproduction Service No. ED 181 785)

Trends in American higher education are surveyed in this report. Focus of the first paper, "Geographics I: A Nation Transforming and Transformed," by Regina M. J. Kyle is on demographic and regional changes affecting higher education. Extensive maps and charts explore the changing nature of American perceptions of the U.S. as a nation and the ways in which this perception influences educational needs and goals. An overview of various developments and their impact on higher education is presented by Edwin J. Allen, Jr. in the second paper, "A Local Habitation and a Name: Rural, Urban, and Suburban Environments." Three major changes in population distribution are cited: loss of population in central cities, with accompanying gain in suburban and rural areas; an increase in conflicts between the suburbanite and his rural neighbor; and changes in the structure of the family. The role of government in higher education is considered in the following three articles: "The Federal Government and Higher Education: A Review of the 95th Congress," by John W. Crewson; "Future Trends in Funding for Higher Education," by Kathryn Mohrman; and "A Department of Education? Summary of Proposals and Policy Implications," by John W. Crewson. An overview of the major legal decisions affecting higher education in 1978 is presented in a paper by Frank Gerry and Edward P. Kelley, Jr., "Legal Affairs and Higher Education." The relationship between state and higher education is surveyed in papers by Richard R. Nelson on state labor legislation and Phillip J. Hellmuth et al. on "Residency for Tuition Purposes in Wisconsin" (with accompanying data from the Education Commission of the States). The Ph.D. job crisis is discussed in a paper by W. Richard Cantwell and in a reprinted article entitled, "Working Together...The American Academy of Arts and Sciences and the History of Science Society." (ERIC)

Lonsdale, R.C. Futures research, policy research, and the policy sciences. Education and Urban Society, 1975, 7(3), 246-293.

Education relates to the future in very short-term goals, while its role should be to prepare the populace, research, and policy for innovative creative solutions for projected probabilities. Futures research depends upon reducing the uncertainty of probabilities: forecasting, and especially technological forecasting, offer alternative methodological approaches projecting alternative futures from which choices can be made. Current attempts at futures research and policy research give evidence that a meld has begun with policy planning. Five proposals for futures policy research suggest: (1) large state education departments should establish offices of futures research, (2) U's should encourage establishment of commissions to draw upon futures interest among faculty and students, (3) basic methodology courses in research should include instruction in futures research, (4) doctoral students should be encouraged to do studies involving futures research methods, and (5) U. administrative training programs should encourage exploration of futures research. In COMMENTS ON THE LONSDALE PAPERS, Thomas S. Popkewitz and Howard E. Wakefield (U of Wisconsin, Madison) express interest in and reservations on futures policy. Popkewitz sees conceptual problems involved in defining futurism, the moral and political dimensions of futures research planning, and the optimism of futurism. Educators do not impact methodology only; values are inherent in futuristic concerns and self-fulfilling prophecies must be avoided. Who is to decide the ultimate concern of futurism's research -- does this imply an expert elite? A clear case for the role of education in futurism is not presented. Wakefield wonders which of the available methods would best lend itself to futuristic research and asks for comments regarding and lack of interest by school district officials regarding futures planning. Lonesdale replies that futures research

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does involve values, but that identifying value shifts should be an important function of knowledge gathering. Futurist researchers should project the probabilities based on values inherent to each, clarifying value direction connected with choices. There is a need for a recorded history of futurism so that predictions can be validated against fact. Futurists should be allowed to project, predict, and forecast based upon proposed creative solutions. But their predictions should be rigorously challenged to elicit the best possible alternative for future directions. (SOCIOL AB)

Madgic, R. Using futures research approaches to aid educational decision-making. Thrust for Education Leadership, 1976, 5(4), 27-28.

By applying futures research approaches educators are able to reject demands and/or claims based upon simplistic visions. They can, therefore, make more realistic curriculum revisions in planning communication skills programs that will benefit students in the future. (ERIC)

Maier, H. Long-term planning and forecasting for education in the German Democratic Republic. In T.S. Khachaturov (Ed.), Methods of long-term planning and forecasting (Proceedings of a conference held by the International Economic Association at Moscow). London: The Macmillan Press, 1976.

This article describes a number of planning models, examining them in terms of their usefulness for interrelating the socio-economic, scientific-technical, and pedagogical evidence as well as their relevance for long-term decision-making processes in a socialist-society. The author develops a model which allows him to estimate the course of manpower demand over a certain period of time, given changing numbers of skilled workers and graduates from universities and higher technical schools, and in turn, to illustrate that changes in these numbers affect the total capacity and the pattern of training in the educational system of the G.D.R. A model of "difference equations" is used.

Masini, E.B. Experience of education towards the future. Convergence, 1975, 8(3), 77-84.

The author analyzes the experience of education towards the future as it is formalized in courses for post-graduate study at the school of future studies, Rome; as it is seen by young people, undergraduates, and high school students; and as a continuous transformation, acquiring characteristics of lifelong education. (ERIC)

Maxmen, J.S. Forecasting and medical education. Journal of Medical Education, 1975, 50(1), 54-65.

Describes modern forecasting techniques and criteria to evaluate prognostic endeavors, including intuitive forecasting, consensus methods, cross-impact matrix methods, and trend extrapolation. Examples of how these "futures research" techniques can be applied to medical education are provided. (PSYCH AB

McCormick, K. The political context of manpower forecasting in Britain. British Journal of Industrial Relations, 1977, 15(3), 403-413.

The most significant development affecting the potential uses of manpower forecasting in educational planning has been the emergence of the department of employment as a strategically important ministry. The responsibilities of

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this department for the full range of utilization will be given more serious attention and that manpower forecasting will not be used to concentrate political attention on the educational system. The neglect of the possibilities of direct action on the stock of qualified manpower in industry in favor of concentration on the new supply from the educational system represented a usurpation of political responsibilities and an attempt to place the burdens of change on the educational system. There is some hope that a department with a wider brief for manpower issues will avoid that pitfall. References. (INFO)

McNamara, J.F. Trend impact analysis and scenario writing: An application in an urban school district staff development program. Planning and Changing, 1975, 6(1), 17-27.

Outlines a field-based project that shows how an urban school district can use futures research models to approach long-range planning. (ERIC)

Moore, L.F.,& Charach, L. Planning for a University: Using interactive forecasting. Long-Range Planning, 1980, 13(3), 109-114.

The benefits of programme review, forward planning and control have been demonstrated at the university-wide level. Within a faculty or department, there is also a clear need for developing and using planning methods which are rationally based and forward looking if appropriate responses to changing social and academic trends are to be made. This paper delineates a number of planning and control variables encountered at the faculty or departmental level, describes the development and use of a computer-based interactive forecasting model, and discusses the advantages and limitations of such models in planning a faculty's progress toward its goals. (AUTHOR)

Morris, G.B. An educational model for the 1980's-90's. Paper presented at the World Future Society - Education II Conference, Minneapolis, October 17-21, 1979. (ERIC Document Reproduction Service No. ED 180 884)

An educational framework for the future should be based on an understanding of the nature of future society and reflect approaches significant to harmonious survival. The framework should include the concepts of change, conscious awareness, and cooperation. Concepts of change emphasize environmental change and change in personal behavior. The development of conscious awareness requires new modes of thinking. Specifically, a form of thought defined as global or universal should be explored. Also, because cooperative survival may replace the concept of competition, educational approaches should be aimed at individual and social cooperation. This framework would not require a curriculum change, but rather a change in how the student experiences the content. Changes in school programs may include greater emphases on physical education, personal development, human relations, self-reliance, relaxation, religion, and recreation. Finally, decision making and problem solving by educational leaders will involve cognitive, affective, and spiritual domains.

O'Brien, P.W. Futures research in education. Australian Journal of Education, 1976, 20(1), 46-58.

Outlines the growth of futures research and the role accorded to it in Europe, North America and elsewhere, particularly with reference to work being carried out in the United States. (ERIC)

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Organization for Economic Co-operation and Development. Future educational policies in the changing social and economic context. Report of the Meeting of the OECD Education Committee at Ministerial Level. Washington, D.C.: OECD Publications and Information Center, 1979.

Discussion at the OECD Education Committee meeting focused on education policies of OECD nations in the context of social and economic trends, the contribution of education to preparation for working life, and the transition from school to employment. The report is presented in two major sections. Section I outlines the educational policy debate. Statements by the Secretary-General of the OECD and by the Minister of Education and Science of the Netherlands focused on the need for educational re-assessment and innovations, educational objectives, individual and social needs with regard to education, governmental responsibilities to provide education, teacher training, the role of education in the emancipation of women, and political motivations of various social groups seeking specific types of education. Following these statements are outlines of themes discussed by the ministers and a declaration of educational policy priorities. These include taking a long-term view with regard to educational issues, increasing educational cooperation between nations, and increasing access to education. Section II contains a report prepared by the OECD Secretariat to provide background information to the meeting participants on educational policy trends. Topics discussed include demographic trends, enrollment trends, teacher supply and demand, trends in educational expenditure, and interrelationships between education and employment. (ERIC)

Shane, H.G. Curriculum change toward the 21st century. Washington, D.C.: National Education Association, 1977.

In his latest book, Shane examines the responses of an international panel of educators and other leaders to questions regarding the content and direction of education in the years to come. The report concludes by proposing 28 cardinal premises to guide curriculum development for the future. (WFS)

Shane, H.G. Social decision prerequisite to educational change, 1975-1985. In G.E.W. Wolstenholme, & M. O'Connor (Eds.), The future as an academic discipline, (Ciba Foundation Symposium 36). New York: Elsevier, 1975.

This article takes the position that the schools have not performed, and in all probability never can perform, any yeasty leadership function in social change.

If, like a highly polished speculum, schools can merely reflect the society in which they have their being, then certain social decisions are prerequisite to any new basic educational change. The success with which social change occurs depends on the image or images of the future which a given human sub-set accepts and the way this group chooses to approach the future.

Points developed include: (1) some premises which may be helpful in contemplating the future, (2) probable developments of the next decade which are likely to have a bearing on cultural change, and (3) a roster of important decisions which must be made if schools are to have clear guidelines as they seek to serve the society that supports them.

The paper concludes with speculations on the probable nature of educationally portentous decisions that are emerging, and with a timetable for educational change between 1975 and 1985. (AUTHOR)

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Shane, H.G. The educational significance of the future. Bloomington, Indiana: Phi Delta Kappa Educational Foundation, 1973.

The author, a professor of education at Indiana University, prepared this report for the U.S. Commissioner of Education on the basis of interviews with more than 80 futurists. The book offers a compact digest of what futurists are thinking about the future and specifically about education. (C)

Steele, J.L. Operational research and formal education. Journal of the Operational Research Society, 1979, 30(3), 201-211.

The development of operational research (OR) in the U.S. educational system is related to certain political and social developments which have enhanced the significance of matriculation. The impact of these developments on the traditional educational delivery system has stimulated administrators to seek outside help. These developmental factors include: (1) increasing population, (2) advancing technology, (3) curricula support, and (4) the equal rights movement. School management generally needs 3 levels of information: (1) forecasting, (2) management control, and (3) operational control. Several varieties of quantitative models for educational information analysis have been developed for different purposes. These models include: (1) simulation and cost models, (2) general deterministic models, and (3) specific deterministic models. Meaningful applications of OR in future education depend on the development of goal programming models. References. Equations. (INFO)

Toffler, A. (Ed.). Learning for tomorrow: The role of the future in education. New York: Random House, 1974.

This anthology is essentially a call for "education in the future tense." The central thesis is that all education springs from images of the future, and all education creates images of the future. The volume includes a "Status Report, Sample Syllabi, and Director of Future Studies" by Billy Rojas and H. Wentworth Eldredge. (WFS)

Wasdyke, R.G. Career education and the future. Washington, D.C.: National Advisory Council for Career Education, 1975. (ERIC Document Reproduction Service No. ED 122 007)

The report presents emerging trends, future outlook, and potential legislative provisions for career education. Two basic assumptions by the year 2000 are the recognition of education as a lifelong process with open entry/exit and the disappearance of traditional distinctions between learning in a formal setting and learning in the work place. The future will bring coequal collaboration and linkage between education and work sectors, emphasis on individual needs through career education, individualized learning through competency-based assessment, increased opportunities for education and training, expansion of counseling/guidance/placement/information systems of career development, the concept of entitlement or an "educational savings account," loosening of organizational constraints, and the emergence of a national education-work policy. Five basic provisions for comprehensive career education are identified: (1) leadership development (inservice training for teachers, counselors, and coordinators), (2) program grants to states, (3) state planning and evaluation grants, (4) continued authorization of a national advisory council on career education, and (5) an expanded federal office of career education. Procedural steps are discussed, and estimated costs are presented. A paper, "Futures Research in Education," and a bibliography are appended. (ERIC)

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Walz, G.R., & Leu, J. Educational futures: A survey of futuristic issues and expectations. Ann Arbor: ERIC Clearinghouse on Counseling and Personnel Services, 1979.

The ERIC Futures Issues Component (EFIC) of the ERIC Clearinghouse on Counseling and Personnel Services (ERIC/CAPS) created a survey with each of the 16 ERIC Clearinghouses and the University of Michigan School of Education to identify emerging social issues and developments with potential for significantly affecting education. Respondents (N=79) to the 55-item survey were Clearinghouse staff members, Advisory Board members, and users of the ERIC System. Results suggested that among the ten items most often nominated as priorities for action, most deal with services and/or responses to special population groups such as women, adults, and minorities. Equal access to education and expanded opportunities for life-long and continuing education for all individuals were also rated high in action priority. The appendices contain the Futures Survey instrument, the means and standard deviations of responses to Part III items in the survey, data from all issues in Part IV of the survey, and a summary of data from the total sample concerning issues selected most or least often for educational involvement. (ERIC)

Weiler, H.N. New directions in educational planning: Implications for training (IIEP Seminar Paper: 36). Paris: UNESCO, IIEP, 1977.

This paper identifies the directions in which new developments in educational planning are moving and draws some conclusions on how the training of specialists in the field of educational planning is likely to be affected by changing notions and practices. The first part of the paper outlines the assumptions that have characterized the field in recent years. These assumptions are concerned with planning as social research; the distribution of education; the quantity, quality, and content of educational planning; educational planning at national levels; and what lies beyond the design of educational plans. Against this background, the second section briefly reviews how the changes discussed are likely to affect the role and the competencies required of the people who will be in charge of planning and the relationship of these changes to the training of planners. The areas discussed are the research component in training; distribution, disparities, and equality in education; the determinants of educational outcomes; regional and local planning; and the implementation and evaluation of educational plans. (ERIC)

von Weizacker, C.C. Long-term global optimisation in educational planning. In T.S. Khachaturov (Ed.). Methods of long-term planning and forecasting. (Proceedings of a conference held by the International Economic Association at Moscow). London: The Macmillan Press, 1976.

Many educational planning models restrict themselves to easily measurable variables. The author of this article develops a method which takes into account variables and parameters which are difficult to measure but important. This approach involves essentially the use of optimisation techniques for educational planning. In particular, it can be used to obtain approximate data for variables measuring the global benefit of activities such as education, health, services, traffic and others.

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Young, W.E. Determination of educational policy by futures research methods. Saskatchewan, Canada, 1978. (ERIC Document Reproduction Service No. ED 161 139)

Futures research can help human beings have a better knowledge of things to come, determine needs, and set priorities for achieving goals. This paper surveys futures research methods, concentrating on the Delphi Method of forecasting goals. The case study used to illustrate the Delphi Method is a comparison of hierarchical, homogeneous, and heterogeneous panels of experts in specialist and generalist sections who determined priorities for a program in family studies. A questionnaire, evaluated by a 15-member advisory committee, was completed by 104 persons in six Delphi panels. The response to the three-round study was 89.4 percent, 82.7 percent, and 89.4 percent. The Delphi Method was found suitable to develop objectives, course groupings, and content topics for a program in family studies. There were sufficient differences in the panels to warrant continued research into the characteristics of groups used to determine policy. (ERIC)

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POLICY PLANNING AND ANALYSIS

Ascher, W. Forecasting: An appraisal for policy makers and planners. Baltimore: The Johns Hopkins University Press, 1978.

This book appraises the performance of professional forecasts in the past and today. After a comprehensive introduction about the essence of forecasting, the author analyses the reasons for having forecasts and their impact on policy making. The influence of available forecasting methods on the practices of the public decision process receives special attention. The core of Ascher's work is presented in five chapters, one each on population, economics, energy, transportation, and technology forecasting. In each chapter forecasts are analysed for their accuracy and the reasons for their lack of it. The dominant finding is that assumptions are more important than methodology.

Clark, T.N. Community social indicators: From analytical models to policy applications. Urban Affairs Quarterly, 1973, 9, 3-36.

Two types of social indicators are distinguished: descriptive and analytical. The essential characteristic of analytic indicators is that they are integrated into models and are, therefore, useful for understanding patterns of association and change. Both types of indicator can be evaluated in terms of three criteria: (1) measureability, (2) social importance and shared goals, and (3) policy importance. At the community level, these criteria are used to suggest a more intensive focus on (1) policy outputs, the products of collective decisions, in terms of (a) fiscal and (b) performance indicators and (2) policy impacts, the changes brought about in a society as a consequence of policy outputs. Problems that may be encountered in measuring policy outputs and impacts are discussed. A model is derived to explain variations in common expenditures of municipalities (policy outputs) based on data from 51 cities. The author suggests that the model serve as a "core model" to which specific variables might be added if policy changes concerning them are being considered. It is noted that policy impacts are less well understood than policy outputs. A methodology is presented for assessing attitudes toward public policies that may help in evaluating these impacts. (G)

Cook, T.J., & Sciolo, P. Jr. A research strategy for analyzing public policy. Administrative Science Quarterly, 1972, 17(3), 328-339.

A neglected aspect of policy research has been the systematic analysis of polic impacts. This paper presents a res. strategy for measuring policy impacts based upon the principles of exp'al design methodology. The strategy is illustrated through the application of a multivariate factorial design to the area of air pollution control. The overall approach is discussed in terms of its general utility for policy impact analysis. (SOCIOL AB)

Galnoor, I. Social indicators for social planning: The case of Israel. Social Indicators Research, 1974, 1, 27-57.

The author views social planning as an organizing framework for guiding government intervention in social life and social indicators as providing the informational basis for formulating policies, preparing social plans and evaluating the impact of government activities. Social planning and social indicators are only two links in a desired sequence of organized social action, but given the urgency of social problems and the opportunity cost of waiting for further theoretical development, the author urges that initial efforts be directed at developing social indicators for social planning. Israel's experience is presented as an example of (1) the ideological and operational

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background of specific types of intervention by the State and (2) specific areas that have been neglected, or that have not been given adequate attention, because of the lack of social indicators to assist in acquiring an overall understanding of societal changes. These examples are used as a basis for suggesting some practical possibilities for developing social indicators and social planning in Israel and elsewhere. The author lists several implications of his study of the Israeli situation. (1) Social indicators cannot be value-free. (2) National societies, especially in new nations, emphasize the importance of creating and preserving the national framework, often at the cost of internal social development. (3) Narrowly defined economic objectives cannot be assumed to be a "stage" of social development. (4) Sectoral planning in the areas of agriculture, transportation, education, and in other areas related to societal well-being tends also to use an economic and physical information basis. (5) The threshold leading to the industrial and postindustrial era poses some difficult choices for many countries. (6) The detection of societal changes cannot be achieved without a system of social mapping, based on the collection and utilization of social indicators. (7) Policymaking in many countries utilizes various kinds of information on foreign relations, security, economic development, and public opinion. (8) Social reports by an independent organization or by the central government can help in crystallizing this information for purposes of reviewing social changes, pointing out desired directions of social development, and evaluating policy achievements. (9) Government departments and public organizations can use social information for planning and evaluating the social benefits of their activities. (10) The multiplicity of sources of social indicators within any society should be regarded as a safety valve against the totalitarian implications of collecting and using social indicators for social planning. (11) Social indicators and social reports do not guarantee improved social policy and planning. (G)

Gray, P. University planning models: A survey and a bibliography (Exchange Bibliography No. 1279). Monticello, Ill.: Council of Planning Librarians, 1977.

Increasing use has been made in recent years of the techniques and ideas of management science and operations research in the management of universities and colleges. The various types of models being applied are described briefly and three specific evaluated. The bibliography is keyed to the various areas of research and implementation. (AUTHOR)

Hahn, W.A., & Gordon, K.F. (Eds.). Assessing the future and policy planning. New York: Gordon and Breach, 1973.

This volume consists of papers presented at a conference organized by the Washington, D.C., chapter of the Institute of Management Sciences, the World Future Society, and the National Bureau of Standards in Gaithersburg, Maryland, in March 1970. The contents include papers by Joseph P. Martino on "Methods of Technological Forecasting," Jack W. Carlson on "Impact of Future Forecasts on Federal Policy," and Charles W. Williams, Jr., on "The Role of National Goals Research." (WFS)

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Moyer, K.L. Evaluative research systems for ... sented at the Annual Meeting of the Concerned Leaders in Educational Administration and Research, Alexandria, November 6, 1978. (ERIC Document reproduction Service No. ED 179 554)

Four evaluation methods for determining educational policy are objectivism; subjectivism; emotive-imperative; and instrumentalism. For the objectivist, the rationale for undertaking an evaluation is based on empirical verification or non-verification of claims of existing policies or activities. Secondly, the objectivist is interested in questioning what should exist in education. Objectivists may be disinterested in the agency or policy making decisions, and are mainly concerned with precision, methodological accuracy, and the reliability of the evidence. The subjectivist is interested in the affective domain of feelings, attitudes, and interests, and many use the questionnaire as a methodological tool. The subjectivist is concerned with the value of educational products in terms of approval or interest. For emotive-imperative theorists, in contrast to the subjectivists, praise or condemnation of programs is based on individual feelings, and emotive evaluation is used to change attitudes of policy makers. Although data collection is involved, results are presented as expressions of feelings. Instrumentalists are involved in influencing decisions which resolve problems practically. Instrumental evaluations are related to specific programs. These evaluations are associated with operations performed during the implementation of programs or policies. Educational policy is considered secondary to educational practice.

University of Southern California, Center for Futures Research. The twenty year forecast: Prospectus 1974. Los Angeles: Author, 1974. (ERIC Document Reproduction Service No. ED 091 291)

An outline of a major project of research and analysis to be undertaken by a graduate school of business administration is described as a continuing series of studies designed to provide a unique data base for planners in the private and public sectors. The data base would be derived from the intersection of significant social, economic, and technological trends and other probable future occurrences. The forecasts would draw on techniques and methods that are being developed for more accurate social and corporate planning, tracing the probable future consequences of current policies and practices, and exploring the potential of alternative courses. The background of fundamental issues that will require resolution in the next decades is presented; the objectives and principles of the pilot study to be conducted are noted; and program priorities--energy and social change, new organizations and institutions, social contracts, and manpower problems--are enumerated. The intended sequence of program processes is discussed and a budget proposed. (ERIC)

Wilson, D.E. The national planning idea in U.S. public policy. Boulder: Westview Press, 1980.

This book offers and analyzes a variety of past and current examples of national planning efforts and ideas. In addition, it discusses various theoretical approaches to planning as well as the future of American national planning. The author supplements his discussion with a number of tables and an extensive bibliography.

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